STEALS & DEALS: HOW TO BE A SAVVY WEB SHOPPER, PAGE 88

MANUARY 2000 MODELLO DE LA COMPANIO DEL COM

The iMac Reborn

The New iMac DV

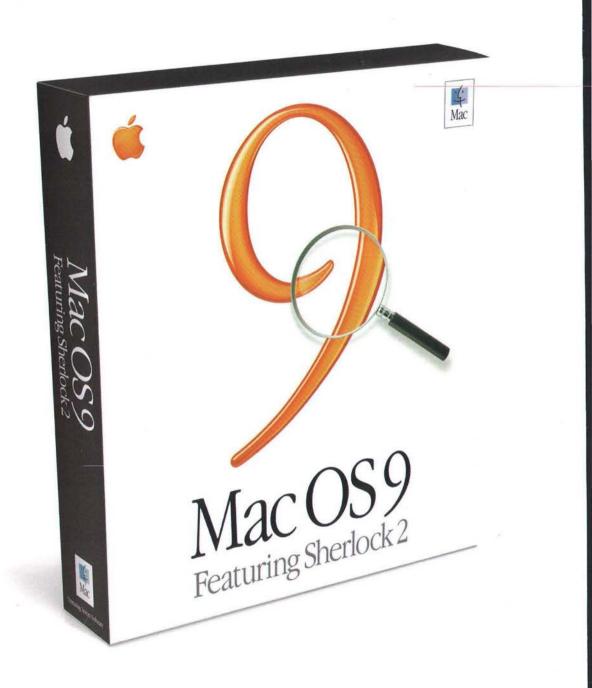
- Fast and Affordable
- Plays DVDs
- Make Your Own Movies
- Is It Right for You?

\$7.98 U.S./\$9.98 Canada

THE MACINTOSH® AUTHORITY www.macworld.com



Nine new surfing hits.



Introducing Mac* OS 9: with nine new power tools designed to make web surfing quicker, safer and infinitely more rewarding. Each of Mac OS 9's new Internet features would be a smash hit on its own, but now they're

Now available on CD.

Sherlock 2. The ultimate Internet search tool is now your personal shopper as well. Sherlock 2 can pinpoint products you want and let you compare prices, availability, even the time left for items on auction. It's also the easiest way to locate people, news

Keychain. No need to keep track of all those passwords and digital ecrtificates for e-mail and web servers. The personal keychain built into Mac OS 9 will keep

track of them
for you. Just
speak or type
your password
to unlock them all.

set up sbared folders

Internet file sharing, Mac OS 9's built-in file sharing now works over the Internet as easily as it works between two Macs in the same room. So you can

that can be quickly accessed by any Mac user you authorize, around the corner or thousands of miles away. Multiple users. No matter how many people share your Mac, it

be your very own
Mac. Just log in and
all your preferences
are activated, from



your favorite browser to your choice of desktop patterns. Your private folder is easily accessible until you log out.

Automatic updating. Now keeping your operating system up-to-date is as easy as installing Mac OS 9.
Automatically, over the Internet, it will download (and even install) the latest free updates for your Mac. So you can get the most out of your computer, without worrying about the chores.

Internet AppleScript. AppleScript lets you automate your Mac

• and your applications, from the simplest task to the most complex workflow. Now

complex workflow. Now
you can tap the power
of AppleScript over the
Internet. And barness the
power of multiple Macs
working together all over the world.

Voiceprint password. Your voice is your password. When you log in,
• Mac 08 9 analyzes your voice to make sure you're who you say you are.

If it's really you, you can get to work

right away, with full access to your personal files. But if it's someone



pretending to be you, access is denied.

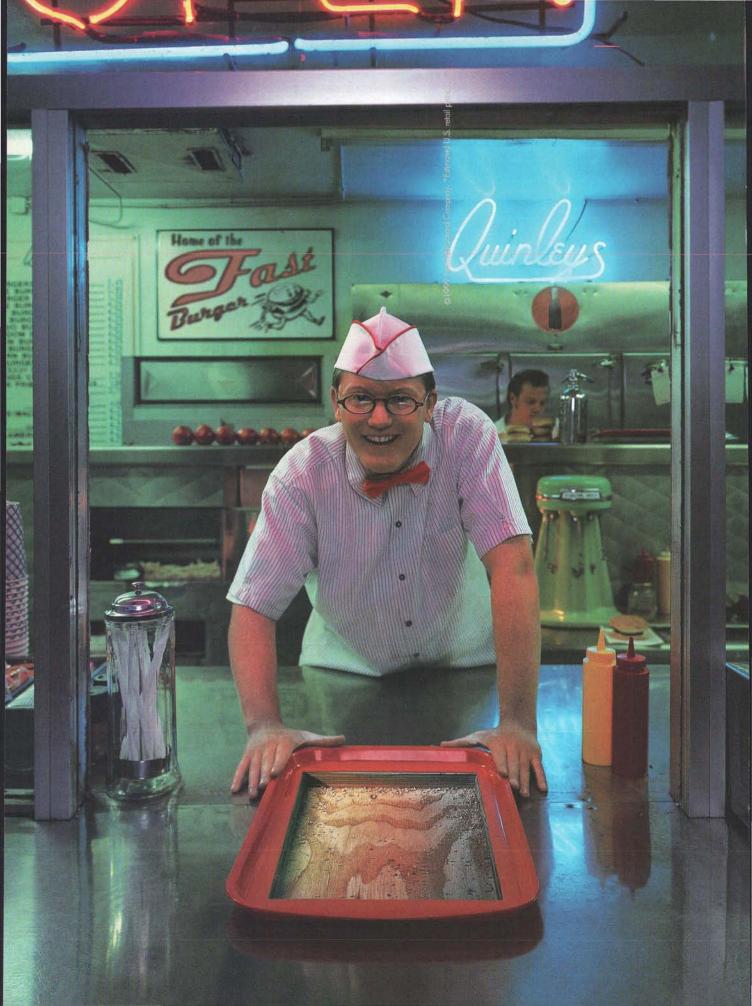
Encryption. Now your private
information can remain private,
even when you transfer it over
the Internet. Mac OS 9 offers built-in,
industrial-strength encryption — so you
can rest assured that
your important files
will remain secure,
no matter where in
the world you send them.

Network browsing. With Mac OS 9's built-in Network Browser, you can navigate your way around your LAN, your intranet or the Internet with ease. Now you can find file servers, FTP

servers and web servers the same way you locate printers on your own local network.



all available in one must-have collection. So if you're the type who loves to explore the Internet, now is the perfect time to install Mac OS 9. Surfing's greatest hits, now only \$99.* www.apple.com. **Think different**.





True to the original.

It serves up to ten color pages per minute of stunning realism.

With printouts that are most like your original photos.

The new HP DeskJet 970C.

It's fast, but it won't sacrifice razor-sharp text and graphics.

And it's PC/USB-connect Mac compatible.

Invent, create and inspire for just \$399:

Achieve superior results with HP supplies. www.hp.com/go/original.



JANUARY 2 0 0 0

Incorporating MacUser

Features

Cover Story

70 The iMac Is Back LAB TEST BY FRITH BREITZER An indepth look at Apple's latest line

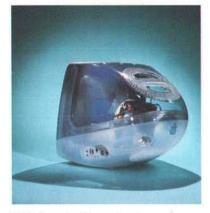
of iMacs. Plus: our review of the iMac DV Special Edition.

78 QuarkXPress versus InDesign: The Great Debate

BY DEKE MCCLELLAND AND DAVID BLATNER The desktoppublishing battle is raging again, and everyone's got an opinion about which DTP powerhouse you'll be using in the next millennium. Go behind the scenes as the experts argue the strengths and weaknesses of each.

The Macworld Web Shopper's Companion

BY ELLIOT ZARET You don't have to fight holiday traffic this year. With our guide to the best places and ways to shop online, the stockings will be stuffed in no time.



Get to know Apple's new breed of iMacs, page 70.



Learn smarter shopping online, page 88.

The DTP experts argue the merits of XPress and InDesign, page 78.

Create

103 Setting Type with InDesign BY OLAV MARTIN KVERN a first look at Adobe's typography breakthrough.

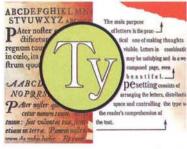
111 **Low-Fat Graphics for** the Web

BY MIKE WOOLDRIDGE Compress graphics to create speedier, more elegant pages.

Graphics

114 Embracing Imperfection

BY CATHY ABES Taking advantage of mistakes can lead to beautiful art.



Explore InDesign's new approach to type, page 103.



G5 promises super processing power, page 25.

News

25 What's Ahead for PowerPC? Motorola reveals future directions for the PowerPC chip, including the G5 with its projected speeds of up to 2GHz.

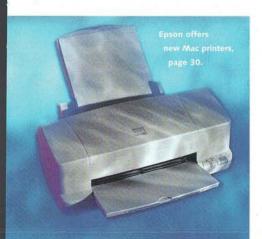
A Downgrade for the G4 Apple stirs up a hornet's nest by lowering the processor speeds in its new Power Mac G4 line.

28 Product Watch New products for your Mac, including a copyfitting tool for Adobe InDesign and a highspeed multifunction peripheral from Canon.

28 Adobe's New Web Presence Adobe's new Web site lets you create Web banners and optimize graphics through your browser.

30 Weaving Web Graphics Upgrades

New versions of Macromedia's Fireworks and Dreamweaver make nice with Adobe apps.



Opinion

17 Letters

BY ANDREW GORE Who pays for Apple's G4 mix-up?

63 The Game Room BY CHRISTOPHER BREEN Presenting the Top 10 Mac Gaming Thingies of the past 1,000 years.

176 The Desktop Critic BY DAVID POGUE If Apple can reinvent computers, think what it could do for diapers.

12 How to Contact Macworld



Unlock the potential of infrared, page 95.

Secrets

95 Join the Infrared Revival BY JOSEPH SCHORR Gain new appreciation—and user tips—for your IR-equipped Mac.

99 Quick Tips BY LON POOLE Tips, tricks, and shortcuts.

ON THE COVER
Photograph by Mark Johann

Reviews

- 32 *** Apple iBook Consumer portable
- 34 MetaCreations Painter 6
 Natural-media painting software
- 36 *** AsantéFast 1000 GigaNIC; *** Farallon PN9000-SX; *** Team ASA Stallion GE-II Gigabit Ethernet cards
- 40 ####1/2 HP DeskJet 970 Ink-jet printer
- 42 *** Meeting Maker 6
 Multiuser calendaring system
- 44 **** Palm IIIe Handheld organizer
- 44 *** Adobe Photoshop 5.0 LE Image-editing software
- 46 Phoneline USB
 Home networking system
- 49 \$\$\$\\\^2\\ Spark 1.01 Audio editor
- 51 **** Internet Gateway 6.5; *** IPNetRouter 1.4.2 Internet-sharing software
- 52 Polaroid SprintScan 4000 Slide scanner
- 54 SarbaBatch 3.0
 Audio-conversion software
- 56 #### EtherPeek 4.0
 Ethernet network analyzer
- 58 ###½ MarkzScout 1.0
 Graphics workflow tool
- 60 \$\$\$\$ SimCity 3000 Simulation game
- 61 \$\$\$\frac{1}{2}\$ Fly 1.0 Flight simulator

WE'VE REMOVED THE BIGGEST OBSTACLE BETWEEN YOU AND A PRINTER. THE STORE.

isit our crowded facility! Stand on lines! Interact with indifferent, under-trained clerks! And remember, with every purchase you help us pay our overhead!" No, we don't blame stores for not being this, well, forthcoming. They have a business to run. But do you really want to help them run it?

At the Virtual Printer Store, we bring you the printer without the inconvenience of the store.

You shop at home or office, via phone or mouse. You don't have to deal with traffic - street, store or otherwise. You only pay for what you need (the printer) instead of what you don't (bricks, mortar and middlemen). And since you buy direct from the manufacturer, you deal with people who'll actually talk to you after the sale.

We offer free technical support 24 hours a day, 7 days a week - for the entirety of the one-year warranty. And if you run up against a problem we can't solve, our Platinum Exchange Warranty Program guarantees you a replacement printer by the next business day. (All our printers come with a thirty-day, money-back guarantee as well.)

Finally, we offer printers good enough to sell themselves - because they have to. Printers that turn out vivid halftones, poster-sized graphics, printshop-quality text, and perform various other noteworthy feats noted here.

The Virtual Printer Store. Because the best place to shop for a printer isn't a shop at all.



ELITE 12N Series

12 pages per minute 600 x 600 dpi resolution Maximum Print Area 8.5" x 14" Letter, legal, envelope 250-sheet Universal Tray PostScript® Level 2 compatible, PCL 5 35 PostScript fonts, 15 PCL fonts, 45 downloadable fonts RAM expandable to 64 MB 1st year Platinum Exchange EtherTalk*, TCP/IP USB, Ethernet (10 BaseT), Bi-directional Parallel

2nd Paper Feeder (includes 500-sheet Universal Tray) Add \$299

2nd year Platinum Exchange3 Add \$ 99

\$849

\$949

1200 dpi version



Also available in LocalTalk® versions



ELITE XL 20 Series

20 pages per minute 600 x 600 dpi resolution Maximum Print Area 12.6" x 35.1" Letter, tabloid, legal, envelope, poster 500-sheet Universal Tray PostScript Level 2 compatible, PCL 5 35 PostScript fonts, 15 PCL fonts, 250 downloadable fonts RAM expandable to 64 MB 1st year Platinum Exchange EtherTalk, LocalTalk, NetWare® TCP/IP Ethernet (10 BaseT, AAUI). Bi-directional Parallel

2nd or 3rd Paper Feeder² (includes 500-sheet Universal Tray)

2nd year Platinum Exchange3 Add \$179

\$1599

Lease \$56 Month/36 months4

\$1899

800 dpi version

Add \$329



ELITE 12/600 USB

12 pages per minute 600 x 600 dpi resolution Maximum Print Area 8.5" x 14" Letter, legal, envelope 250-sheet Universal Tray PostScript Level 2 compatible, PCL 5 35 PostScript fonts, 15 PCL fonts, 45 downloadable fonts RAM expandable to 64 MB 1st year Platinum Exchange USB (cable included), Bi-directional Parallel

2nd Paper Feeder¹ (includes 500-sheet Universal Tray) Add 5299

2nd year Platinum Exchange3 Add \$ 99

\$799





TO ORDER CALL 1.800.422.7777 OR VISIT WWW.THEVIRTUALPRINTERSTORE.COM





Conquer Disk Damage



DiskWarrior is a revolutionary new utility that combats disk damage. It quickly rebuilds, recovers and optimizes your HFS and HFS Plus disk directories, eliminating all directory errors and recovering lost files. Other utilities attempt to repair disks by patching the damage. Patching can result in more damage and permanent loss of files.

100% Recovery Assurance

Only DiskWarrior builds a new optimized directory using data recovered from the damaged directory. You have 100% assurance that DiskWarrior will always restore your disks and recover your files when directory damage is your enemy.* You'll also have 100% confidence that you're getting the desired results. DiskWarrior's exclusive Preview ability lets you preview the restoration. You can examine your damaged disk in the Finder as it will appear after the directory is restored but before any changes are made to your disk.

Routine Maintenance

DiskWarrior is your first line of defense against unseen disk damage. Running DiskWarrior regularly prevents small unseen problems from becoming

large ones by keeping your directories error free. You'll also keep your directories optimized to speed up overall disk performance.

©1998 Alsoft, Inc. PO Box 927, Spring, Texas 77383-0927 USA. 281-353-4090 or fax 281-353-9868. DiskWarrior is a trademark of Alsoft, Inc. *Visit our eb site or call for requirement DiskWarrior is not a magician. No have been written over.



THE UTILITY COMPANY

800-257-6381 шшш.Alsoft.com

Macworl

Andrew Gore

EDITORIAL OPERATIONS MANAGER

Savraj Benedict

EDITOR

Michael Penwarden Jason Snell

SENIOR EDITOR, DEPARTMENTS

Nancy Peterson

SENIOR EDITOR, HOW-TO ASSISTANT EDITORS

Scholle Sawver Frith Breitzer, Kathryn Lunsford,

Jonathan Seff

REVIEWS

SENIOR EDITOR, PRODUCTS SENIOR EDITOR, REVIEWS

Stephen Beale

SENIOR EDITOR, MACBUY.COM

Linda Comer Suzanne Courteau

EDITORIAL ASSISTANT

David Read

CONTRIBUTING EDITORS

Henry Bortman, Christopher Breen, Bruce Fraser, Ted Landau, Deke McClelland, Rik Myslewski, Tom Negrino, David Pogue, Lon Poole, Stephan Somogyi, Franklin N. Tessler

Kristina De Nike

SENIOR LAR ANALYSTS

Jeffy K. Milstead,

ASSOCIATE LAB ANALYST

Kevin Mitchell

INVENTORY COORDINATOR

Gil Loyola Ulyssis Bravo

COPY EDIT

MANAGING EDITOR

Claire H. Breen

ASSISTANT MANAGING EDITOR

Paul-Michael King

COPY CHIEF

Jon Zobenica

COPY EDITOR

Charles Purdy

ART AND DESIGN

DESIGN DIRECTOR

Eleanor Leishman

ART DIRECTOR ASSOCIATE DESIGNERS Sylvia Chevrier Martha Katt.

Ionathan Woolson

DESIGN ASSOCIATES

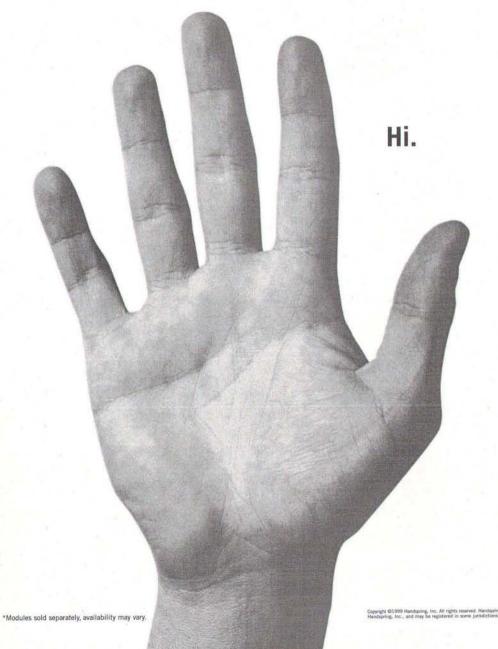
Jackie Goodman.

Sean McDonald

INTERNATIONAL EDITORS

Steven Noble, Australia; Bernard Le Du, France; Andreas Borchert, Germany; Enrico Lotti, Italy; Yoshio Moriya, Japan; Tomasz Bitner, Poland; Daniel de Blas, Spain; Lennart Håkansson, Sweden; Fred Jame, Taiwan; Bahattin Apak, Turkey; Simon Jary, United Kingdom

We're Handspring. And this is Visor™, the first truly expandable handheld computer. It may look like an ordinary organizer, but it is infinitely more than that. The secret lies in its revolutionary Springboard™ expansion slot. By simply inserting a module, your Visor will convert into an MP3 Player, a pager, a Global Positioning System, a voice recorder, and soon, much more.* Plus, it downloads thousands of existing Palm applications and the USB connection makes syncing to your Mac easy. Starting at only \$149, the price is just as revolutionary. Visit www.handspring.com today. And see how the future will soon be firmly within your grasp.







Project Scheduling Made Easy!

Y BOSS

I'm not a project management expert, but everyone thinks I am. Most of my time is spent completing tasks, so I need a scheduling tool that's easy, fast, and flexible.

FastTrack Schedule 6.03 fills the bill. It keeps me organized and in control displaying all my project details in rich, colorful timelines. FastTrack Schedule provides just the right amount of power because it's more sophisticated than day-planners, but easier to use and

half the price of traditional, high-end project managers.

The presentation-quality schedules clearly illustrate project objectives and deadlines keeping team members and

clients informed and up-to-date. In a single schedule, I can outline multiple projects,

make assignments.

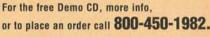
track cash flows, setup dependencies-

even add graphics.

Whether I use it

once a week or every day, FastTrack Schedule makes

project scheduling easy.







Version 6.03

Schedule Tomorrow's Success Today.™ AEC

TRY IT & BUY IT!

Dowload the demo and order online today at

© 1999 AEC Software Inc. All rights reserved. Corporate names and trademarks stated herein and the property of their respective owners. "Estimated Street Price is \$199, prices may vary at individ-Outside the United States, please call (703) 450-1980 for info



ExpressDate" . FastSteps"

Open/Export MS Project MPX files

• Full AppleScript Suport

Histograms . Hyperlinks

· and much more.

Macworld

Colin Crawford PRESIDENT AND CEO ASSISTANT TO THE CEO Sharon Sanderson CHIEF FINANCIAL OFFICER Stephen Daniels Eos de Feminis BUSINESS MANAGER ACCOUNTING COORDINATOR Ronda Bittner Ricardo Sandoval BILLING MANAGER Sue Murphy DIRECTOR OF HUMAN RESOURCES HUMAN RESOURCE MANAGER Marisa Chow IT MANAGER Michael Talbot

DISPLAY ADVERTISING SALES

VICE PRESIDENT, SALES, & PUBLISHER Steve Plevin (415/243-3509) ASSOCIATE PUBLISHER, EAST COAST Cynthia Ramsey (973/243-1197) SALES & MARKETING COORDINATOR Heather Kudzia (415/278-8542) Katherine Lebioda (415/243-3577) SALES ASSISTANT Brock Keeling (415/243-3662) CALES ASSISTANT NATIONAL ACCOUNTS MANAGER Jessica Ross (415/243-3583) ACCOUNT EXECUTIVE Coretta Wright (415/243-3615) NATIONAL ACCOUNTS MANAGER Sara Culley (970/327-4499) Margaret Level Green (415/243-3582) ACCOUNT EXECUTIVE Paul Bonarrigo (508/533-4020) NATIONAL ACCOUNTS MANAGER Jo Zottarelli (516/277-4134) ACCOUNT EXECUTIVE Niki Stranz (415/243-3664) SHOPPER ACCOUNT MANAGER SHOPPER ACCOUNT MANAGER Carol Johnstone (415/243-3691) SHOPPER ADMINISTRATIVE ASSISTANT Alissa Mach (415/243-3628)

RESEARCH

SENIOR RESEARCH ANALYST

Phillip Hibbert

MARKETING

SENIOR MARKETING MANAGER ONLINE MARKETING MANAGER Francesca Koe Diane Powers

MACWORLD GLOBAL PRODUCT SUPPORT CENTER

COORDINATOR

Sharon Sanderson

ONLINE PRODUCTION

ONLINE PRODUCTION DIRECTOR Jeff Cheney Ron Neal WEB PRODUCTION MANAGER Jason Warner WER PRODUCTION ASSISTANT ONLINE AD PRODUCTION MANAGER Steve Spingola Megan Matteoni DIGITAL AD COORDINATOR

PRINT PRODUCTION

PRODUCTION DIRECTOR MANUFACTURING TECHNICAL DIRECTOR

Cynthia Neustadt Clayton Haberman

DIGITAL AD COORDINATOR/

MANUFACTURING TECHNICAL COORDINATOR Mac Scott

Macworld is a publication of Mac Publishing, L.L.C. Macworld is an independent journal not affiliated with Apple Computer, Inc. Macworld, MacUser, MacWeek, Macworld Interactive, Macworld Shopper, MW, MW Lab, MW Shopper, The Desktop Critic, Expert Graphics, Quick Tips, Star Ratings, Buyers' Tools, Streetwise Shopper and Conspicuous Consumer are registered trademarks of Mac Publishing, L.L.C. Apple, the Apple logo, Mac, and Macintosh are registered trademarks, and MacLetter and PowerBook are trademarks. of Apple Computer, Inc. Printed in the United States of America Copyright © 1999 Mac Publishing, L.L.C. All rights reserved.

Color excites. Stands out. Makes an impression. You'll find no color richer, no color more true-to-life

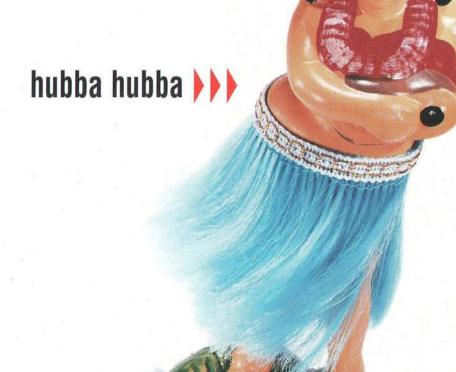
than Ricoh Aficio color. It sizes up to 13 x 19, and handles paper stock up to 140 lb. index. And when

your business can realize the most brilliant color. At the most affordable price.

Aficio Color™ Well, isn't it time to say "aloha"?



800 63 RICOH ricoh-usa.com



© 1999 Ricoh Corporation

We're in your corner.





Printed reprints are highly effective marketing tools that will enhance your promotional efforts. Use reprints as:

- Trade show handouts
- Direct mail pieces
- Sales tools
- Presentation materials
- HTML / PDF files

To order electronic or printed reprints contact Reprint Services 717-399-1900 info@reprintservices.com

Macworld

HOW TO CONTACT MACWORLD

Subscription Services

800/627-2247 or

303/665-8930. North America only

303/604-7445, outside North America

Macworld Subscription Services

P.O. Box 54529, Boulder, CO 80322-4529 www.zdnet.com/zdsubs/macworld/service

World Wide Web Subscription Rates

U.S. Mail

The one-year (12-issue) subscription rate is \$34.97 in the United States and \$54.97 for all other countries (send \$104.97 for air mail). The rate for a one-year (12-issue) subscription with the monthly CD-ROM is \$49.97 in the United States and \$69.97 for all other countries (air mail not available at this time). Checks must be made payable in U.S. currency to Macworld. Please allow 6 to 8 weeks to receive your first issue.

Back Issues of Macworld

Back issues (subject to availability) are \$8 per issue for U.S. delivery (\$12 outside the United States); prepayment in U.S. currency to Macworld is required. Send check or money order to Back Issues Department, Ziff-Davis Inc. P.O. Box 53131. Boulder, CO 80322-3131.

Reprints and Permissions

You must have permission before reproducing any material from Macworld. Write to Macworld, Reprints and Permissions, 301 Howard St., 16th Fl., San Francisco, CA 94105; include a phone number. To order reprints of your company's editorial coverage, call Reprint Management Services at 717/399-1900; fax 717/399-8900; e-mail sales@rmsreprints.com.

We periodically make lists of our customers available to mailers of goods and services that may interest you. If you do not wish to receive such mailings, please write to us and include a copy of your mailing label.

Macworld on Microfilm

Macworld is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 734/761-4700.

The editors of Macworld welcome your tips, compliments, or complaints. Stories and product reviews from past issues can be located at www macworld.com. We are unfortunately unable to look up stories from past issues; recommend products; or diagnose your Macintosh problems by phone, e-mail, or fax. Contact Apple toll-free at 800/538-9696, ext. 500, for information on user groups in your area.

Our offices are located at 301 Howard St., 16th Fl., San Francisco, CA 94105; 415/243-0505, fax 415/442-0766.

LETTERS TO THE EDITOR Direct all comments and suggestions regarding any aspect of the magazine to letters@macworld.com. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all submissions. All letters published in Macworld or Macworld Online become the property of Macworld.

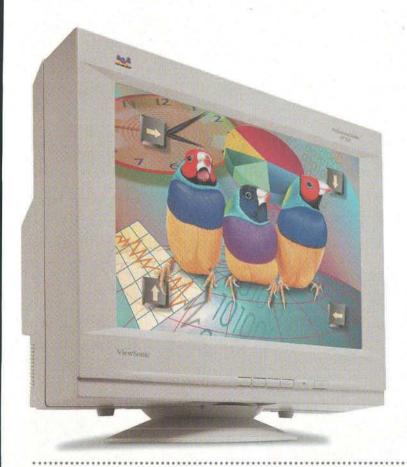
QUICK TIPS Send your questions or tips on how to use Mac computers, peripherals, or software to Macworld, Quick Tips, 301 Howard St., 16th Fl., San Francisco, CA 94105; fax 415/442-0766; e-mail quicktips@ macworld.com. Please include your name, address, and telephone number.



PerfectFlat® technology looks better with...

Apple Power and

ViewSonic on top!



Selecting your Mac* is only half the battle. Today, how you top it off is just as important. Innovations like multimedia monitors, flat panel displays and large screen CRTs are changing the old phrase "Monitor Sold Separately" to "Mac Sold Separately".

Take the new ViewSonic PF790 19" (18.0" viewable) monitor with a .25mm − .27mm super fine aperture grille pitch and a maximum resolution of 1600 x 1200. Or the PF775 17" (16.0" viewable) monitor with an ultra fine .25mm aperture grille pitch and 1600 x 1200 maximum resolution. Both monitors utilize **PerfectFlat** technology designed to provide your Visual Computing™ experience with precise, clear images.

At ViewSonic, we offer the #1 best selling monitors and flat panel displays in the USA*. Buy with confidence from the company that's won over 550 industry awards. Our warranty covers 3 years parts and labor. Plus 24-hour customer service, 7 days a week.

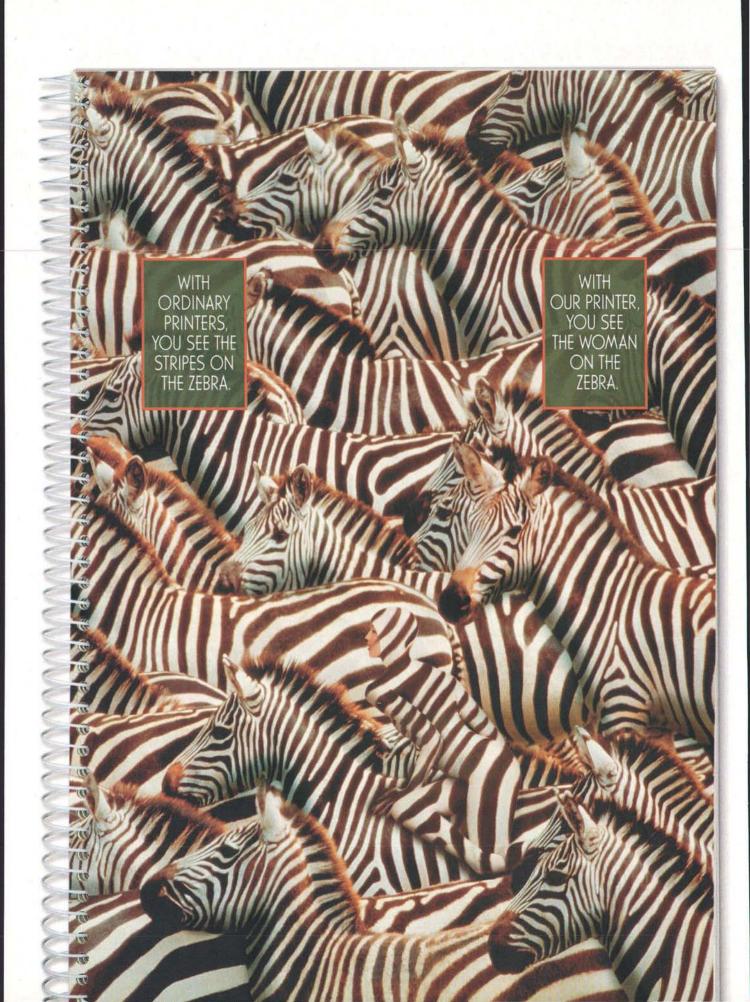
For more information on the company that's won over **550** industry awards, visit our website at: www.ViewSonic.com/mac/

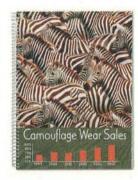


(Mac[®] Sold Separately)



(800) 888-8583 ◆ Specifications subject to change without notice. ◆ Copyright. © 1999, ViewSonic Corporation. ◆ Corporate names and trademarks stated herein are the property of their respective companies. ◆ Apple and Mac are the registered trademarks of apple.
*Stanford Resources, Inc. Monitrak U.S. Desktop PC Monitor Shipments Q2 '99 and Display Search, Quarterly Supply vs. Demand Study: Desktop Monitors Q3 '99. ◆ All rights reserved.





She's incredibly well camouflaged, but you can spot her. Unmistakably. And the company responsible for this sales report knew you would. Because the printer they created it on in its entirety — text and all — was an Epson. One with such acute attention to detail that, even with images as challenging as this, absolutely nothing gets lost in translation. So always, just as you see here, every color and shade is realized. Every nuance is captured. And as you'll discover, when it comes to printers, every stripe is earned.

THE ONLY PRINTERS WITH EVERYTHING YOU NEED FOR ALL THE DETAIL YOU WANT.

To capture the world's most brilliant images, only Epson* color ink jet printers have the PerfectPicture* Imaging System for: 1440 x 720 dpi • Micro Piezo* technology, for a cleaner, smaller droplet — as small as 3 picoliters • Fast print speeds — up to 12 PPM black/10 PPM color • Quick-drying inks • PC/Mac/USB compatibility. And remember, only Epson supplies guarantee Epson quality. For more information, call 1-800-GO-EPSON or visit www.epson.com.



Epson Stylus Color Ink Jet Printers. Sheer brilliance starting at \$129.*

^{*\$129} on the EPSON Stylus Color 660 after a \$30 mail-in rebate. Up to 12 PPM black/10 PPM color with the EPSON Stylus Color 900. Price may vary. Epson, EPSON Stylus and Micro Piezo are trademarks/registered trademarks of Seiko Epson Corp. PerfectPicture is a registered trademark of Epson America, Inc. @1999 Epson America, Inc.



Lottons

Judging an iBook by Its Cover

A FTER READING "MEET THE iBook" (October 1999), I'm more convinced than ever that Apple's barrel is filling with rotten fruit. Don't get me wrong—as someone who's been a loyal Macintosh user since the 68020 days, I'm all in favor of customer-focused innovation. But that Fisher-Price look has got to go. I simply can't imagine walking into a business meeting carrying that thing. I can already hear them: "Where's your real computer?" or "What a nice purse you have."

And another thing: at almost 7 pounds, the iBook is going to be a ball and chain to lug around. I wouldn't carry it to my car, much less across campus or around the world. Since it lacks a touch screen, you can't even use it to copy your instructor's drawings or equations from the board. What good is that to a typical engineering, science, or business student? What Apple needs to design is a 2.5-pound cordovan lightning bolt that reads my mind and feels my pain.

SHERRELL R. GREENE
Knoxville, Tennessee

W HEN STEVE JOBS INTRODUCED the iMac, he called it "tomorrow's technology for \$1,299." The iBook is yesterday's technology for \$1,599. True, the iBook features much of the same technology as the iMac—but a year later, which makes it archaic by computing standards. The iBook falls behind current technology in terms of speed, weight, and graphics acceleration. Granted, these improved features could drive up the price and might be hard to add to a portable computer, but the ability to play video games and watch movies is more appropriate for a consumer-oriented sys-

tem than for any other model. The one truly innovative feature of the iBook—the AirPort—really makes sense only in a classroom setting. Before the iMac, consumer model just meant "cheap." Steve Jobs changed all that when he introduced the iMac, which was a consumer model actually designed with specific features appealing to consumers. Now, with the iBook, we are back to the "cheap" definition of the term.

JACOB SPINDEL
Tualatin, Oregon

In MY OPINION, ONE OF THE biggest advantages Wintel machines have over Macs is they start up faster. Though the G3 processor has helped some, the Mac is still sluggish. In "Meet the iBook," David Pogue discusses Apple's new Energy Saver control panel and its option to save current RAM contents. He says that this feature allows for much faster start-up and eliminates the "Welcome to Macintosh" logo and the

extensions parade. It seems to me that this would benefit all Mac users, not just iBook users. So, is there any way that I can obtain a copy of the new Energy Saver control panel?

> MICHAEL GNOZZIO Flanders, New Jersey

Although we could debate which platform has the speediest start-up (there's no doubt that Windows-based machines take a lot longer than Macs to shut down), we agree wholeheartedly that the iBook's "hibernation" feature (Apple hates this term, by the way) would be an excellent addition to all Mac systems. Unfortunately, according to Apple, hibernation requires both special software and special hardware, and the hardware is currently available only on iBooks. So for now, we can only dream.—Ed.

Forty Bits Bites

PPLE'S NEW AIRPORT, WHICH A received one of Macworld's Best of Show awards at Macworld Expo in New York, uses 40-bit RC4-40 encryption for the transmission of data. This concerns me, because if I were to use a 128-bitencryption browser for, say, online banking, the AirPort's 40-bit transmission becomes the weak link in the security chain and defeats any efforts to ensure strong security. By today's standards, 40-bit encryption is obsolete. It can be cracked by a good hacker in a matter of hours, or in seconds if intercepted by a more advanced organization. For my purposes, and for the purposes of anyone who wants to conduct truly secure online communications and commerce, this level of encryption is unacceptable.

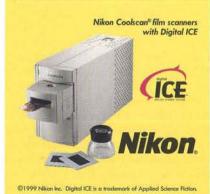
JOE LEWIS
Walnut Creek, California

continues





One second your photo has a scratch. The next, it doesn't. That's the power of Digital ICE", revolutionary technology that instantly removes scratches, dust and fingerprints from scans. If you're looking to save a great photograph, look no further than Nikon. Because no one else has Digital ICE. Call 1-800-52-NIKON or visit our Web site at www.nikonusa.com.



Choose 59 on card or www.macworld.com/getinfo

19K A-OK

In the article "01/01/00" (OCTOber 1999), Geoff Duncan says, "The original Mac development team chose midnight, January 1, 1904, as the start of the Mac calendar—in part because it's mathematically convenient to have a calendar system start on a leap year, which 1900 was not."

Am I missing something here? I learned in school that leap years occur every four years. I wasn't around in 1900, and maybe things were different back then, but if 1904 was a leap year, wasn't 1900 also a leap year?

WILLIAM W. BENNETT
Lewes, Delaware

We received several letters about this. Because Earth takes a little less than 365.25 days to orbit the Sun, every fourth year is a leap year, except years ending centuries, which are leap years only if they are also evenly divisible by 400. Therefore, 2000 will be a leap year, but 1900 wasn't and 2100 won't be.—Ed.

MIDI Me

In his review, October 1999), Jim Heid left out any discussion of QuickTime musical instruments. If Apple wants QuickTime to be taken seriously as a MIDI program—and it should want that—it needs to release a version of QuickTime that won't delay when used in a MIDI setup. QuickTime has always delayed when being used by MIDI controllers or programs. There are too many PCs that can be used as sound modules for Apple to ignore this problem.

MICHAEL DODD Cleveland, Tennessee

Q UICKTIME 4 PRO IS A REAL WINmer that deserves more than the 3.5mouse rating it received in *Macworld*. For
example, in the File menu of QuickTime
Pro is the Present Movie command, which
gives you the option of displaying fullscreen movies. Yes, some clips look a tad
grainy, but the *Star Wars* trailer looks brilliant in QuickTime Pro. And a two-minute
trailer such as the one for *Shakespeare in Love*is only 5.8MB. That means a single CD can
hold 100 minutes of full-screen video.

A. BRODY Laurel, Maryland

I Want My ixTV!

IM HEID ENDS HIS REVIEW OF J XLR8's InterView video-capture card (Reviews, October 1999) by saving, "There's no cheaper way to get video into a USB-equipped Mac." That isn't totally true. I use IXMicro's ixTV, which fits into a PCI slot, captures video, and costs only \$69. It includes a TV tuner in addition to its S-Video and RCA inputs, so you can capture live broadcasts or just watch TV in a window on your screen. And whereas VideoShop's Capture, bundled with the InterView, can capture video at a maximum resolution of only 320 by 240 pixels, the ixTV card can actually capture 640-by-480 video-a feature that allows full-screen playback. In my opinion, it's a much better product than the InterView, for a lower price.

> BRIAN E. HANNON Philadelphia, Pennsylvania

Shot Misses Mark

I READ WITH DISGUST CHRISTOpher Breen's anti-NRA comments in
October 1999's *The Game Room*. It is disappointing that a magazine that professes
to "think different" is so quick to jump
on the politically correct—but highly
misguided—NRA-bashing bandwagon. I
do not look to my computer magazines
for social and political commentary, especially when the commentary is so sadly
lacking in thought and reason.

Please cancel my subscription and refund the balance. I'll be contributing the money to the NRA.

ROCKY ANGELUCCI
Plano, Texas

Rock My World

D AVID POGUE OUTDID HIMSELF with his column "Steven Saves the Mac" (The Desktop Critic, October 1999). It's a masterpiece! Mac users are a unique bunch, possessed of an idealistic devotion to a computing paradigm that seems to go beyond its inherent technological superiority. We hoped for years that someone at the head of Apple would finally get it and realize that our fortunes lie with those who dare to "think different." Steve Jobs deserves all the credit he continues

Before Columbus, sailors stuck pretty much to the same old standard routes, fearing they

would fall off the edge of the world and be eaten by sea monsters. Fortunately, Christopher didn't believe in "standards."

WHAT'S YOUR EXCUSE?

Once you see everything Canvas™ 7 offers, the old standards will begin to look merely standard. With its ingenious Sprite technology, vector illustration flows seamlessly into image editing and typography. So you can create brochures, diagrams, and retouch photos within a single creative application. Or build a pixel-perfect web page with optimized web graphics, mouse-overs and animated GIFs — no extra utilities required, and no limits to what your imagination can explore. It's time you experienced the thrill of discovery. Order Canvas 7 today at www.deneba.com/macworld. Or call 1.800.7DENEBA for the reseller nearest you. With hundreds of other features, 30,000 clip art images, 2,450 fonts and a new, unbelievably low price, there is no excuse.

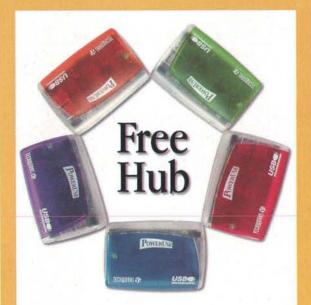
handling limited time offer valid only in North America Canyas SpriteEffects and SpriteLayer are trademarks of Deneba Systems Inc. ...simply the most complete solution for olo editino all your print and internet graphic design needs."

Get a whole new world of creativity for as low as \$99.95* www.deneba.com/macworld



CANVAS 7





Kicking, screaming memory for your iMac or iBook...now with a FREE PowerUSB Hub.

Get up to speed. Fast. Push the limits with a 256 or 128 MB RAM Upgrade — and get a **PowerUSB 4-port Hub** from TechWorks absolutely **FREE!**



Or **save \$20** on the PowerUSB Hub with a 64 MB or 32 MB purchase.

PowerUSB delivers connectivity to all your USB toys such as printers, joysticks, cameras, speakers, scanners and more. And let the ultimate memory take your applications for the ride of their life.



Gotta have it now? Forget the promises and long waits. TechWorks delivers with quality memory in stock and guaranteed outrageous customer service. What else do you expect from the people who supply memory to Apple?



Call now! 800.434.4032 or stop by our store at www.techworks.com/FreeHubNow

Why wait? Just plug & play!





Power To Perform

© TechWorks is a registered trademark of TechWorks (Delaware) Inc. All other names are registered trademarks of their respective companies. Bundle world with protest placed from Oct. 5 - Der. 31, 1999. Offer valid for web prices only while species and excludes both orders. Cell for details.

Circle 129 on card or www.macworld.com/getinfo

gets, and so do you. Thank you for a witty rhyme that was straight from the heart. Your work has earned a place of honor framed on my wall!

> JOHN TUSCH Shelton, Connecticut

A Loan Survivor's Tale

A PPLE HAS A STUDENT-LOAN PROgram that supposedly makes it easy for students to get the Macintosh products they need. The problem is that I don't know of any students who have actually qualified for these loans.

I'm not saying that these loans are never approved, but maybe Apple's standards are too high.

One person I know applied for an Apple loan to buy an iBook. The student's parent—who owns a home and makes well over the \$15,000 minimum income—applied as a coborrower. The loan was rejected. My friend drove down to a local bank and applied for a bank loan with a slightly better interest rate. That loan was approved the next day.

Maybe Apple's loan program is more of a marketing scheme than an actual attempt to give poor students access to computers.

> ROB ALINDER Everett, Washington

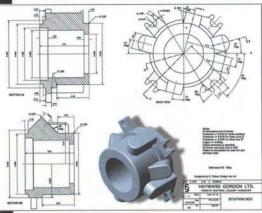
Letters should be sent to *Letters*, Macworld, 301 Howard St., 16th Fl., San Francisco, CA 94105; via fax, 415/442-0766; or electronically, to letters@ macworld.com. Include a return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters. All published letters become the property of *Macworld*.

CORRECTIONS

The Mathematica Student Edition price was listed incorrectly as \$79, which is the upgrade price (Reviews, October 1999). The Student Edition is \$139. And even though Mathematica can read MAT data files, it cannot convert MATLAB M-files to Mathematica notebooks as we stated.

The update to MacLinkPlus Deluxe 10.1 costs \$40, contrary to our assertion in the sidebar "Proceed with Caution" in "01/01/00" (October 1999). The latest Y2K update for FileMaker Pro is 4.1v3, not 4.1v2. m





Carlos Cohen, C. Cohen Designs Inc., Toronto, Canada; Rendered with RenderWork

Introducing

VectorWorks

A Better Way to Design



Roberto Candusso, Arquitetos Associados, Sao Paulo, Brazi

www.diehlgraphsoft.com

After 14 years of constant research and development,
Diehl Graphsoft is proud to introduce VectorWorks—
the next generation of MiniCAD. VectorWorks
improves MiniCAD's proven CAD technology and
merges new state of the art Object-Based design
philosophy. This integration makes you more productive without sacrificing flexibility and control.

Increased Productivity with Object-Based Design

VectorWorks' state of the art Object Technology helps streamline the design process by making it easy to create common design elements. Now, Objects like doors, windows, nuts and bolts, can be created and edited with a click of the mouse,

making it easy to explore design alternatives, consider "what if" scenarios, and handle lastminute client changes.

The Strength of a Proven CAD Technology

VectorWorks offers a solid foundation based on proven CAD technology—giving you the power and flexibility to tackle any design problem.

New features such as Workgroup Referencing, DWG (v.14), Round Walls, Multiple Undo/Redo

and an improved scripting language, strengthen VectorWorks' core CAD capabilities. And, with RenderWorks, VectorWorks' new photo-realistic rendering plug-in, you can bring your designs to life with textures, shadows and dramatic lighting.

The VectorWorks Advantage

With VectorWorks, you get it all—the flexibility and control of proven CAD technology and the productivity benefits of Object-Based design. VectorWorks ships FREE solutions for Architecture, Landscape Design, DTM and HVAC among others. Best of all, you aren't limited to the solutions we provide. VectorWorks is completely customizable, allowing you to create your own custom business solutions.

Special Offer to Readers of Macworld

Save \$134 by purchasing VectorWorks with photorealistic rendering direct for \$1061 or, without rendering for only \$795. Includes FREE Tech Support and a 90-Day Money-Back Guarantee.

Diehl Graphsoft Inc Software for Today's Professional

1-888-646-4223

Visit us at booth #2139 at Macworld Expo

















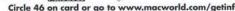








ecterworks



Shell Game

APPLE'S G4 CONFUSION HAS LEFT MAC BUYERS HOLDING THE BAG

AD THINGS HAPPEN.
And nowhere is that truer than in the computer business, where all it takes to derail a multimillion-dollar product launch are overly optimistic forecasts about the production of PowerPC G4 chips. The thing is, if something unforeseen happens, who should be expected to pay the price—the company that made the overly optimistic forecasts, or the consumer?

If knee-jerk responses are any indication, Apple believes the answer is the latter—hidden in Apple's reshuffling of the Power Mac G4 lineup is the fact that the company has failed to deliver the value it first promised (see "Fantastic Four," November 1999).

Three-Card Power Macs

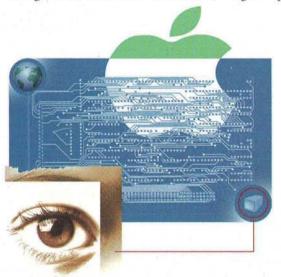
Here's how it works: if you'd been lucky enough to receive a 400MHz Power Mac G4 before the G4 shell game, you would've gotten a machine with 64MB of RAM, a 10GB hard drive, and a 24× CD-ROM drive for \$1,599 retail. After the shells got shifted around, that configuration was made available with a slower processor (350MHz, to be exact), but Apple still expects you to pay the same price—\$1,599. So, if you purchased one of those first 400MHz G4s, you got a heck of a deal.

The same is true for the two higherend machines. Now, instead of getting a 450MHz or a 500MHz machine, you get a 400MHz or a 450MHz system with the same goodies as its speedier precursor, but with no change in the price tag.

Then there were Apple's manic vacillations over what would happen to the poor souls who'd ordered a G4 before the price shuffle but hadn't yet received their Power Macs. First they were told that they were out of luck; then their orders were canceled, and they were told to order one of the new configurations at the new price. But after Apple's e-mail server was drowned in a tidal wave of customer complaints, the company modified this policy and said it would honor a limited number of original orders placed through the Apple online store, but none made through authorized resellers. This new plan was superseded a couple days later by Steve Jobs's public intervention: all G4 orders placed before the configuration changes would be honored—at some point in time.

Overpromise, Underdeliver

Now that the shells have stopped caroming around the table like billiard balls,



the question facing customers is, under which shell has Apple placed the pea? Financial issues aside, the G4 shuffle is confusing the heck out of Apple's customers. We at *Macworld* know firsthand—they're sending us mail.

In the original G4 lineup, the 400MHz machine was based on a logic-board design, appropriately code-named Yikes, that offered the same features as the blue-and-white Power Mac G3—except it came with a G4 processor. The 450MHz and 500MHz machines were based on a totally new design, code-named Saw-

tooth. Unlike Yikes machines, Sawtooth-based G4 Power Macs offered such advances as a 2× AGP graphics slot, an AirPort slot, an internal FireWire port, and much faster bus speeds.

Now the 350MHz machine has the Yikes logic board, with its slower PCI slots, while the 400MHz and 450MHz machines are Sawtooth-based, adding all those cool new features I listed above. Confused? I know I am.

I can understand Apple getting stuck and not being able to get enough 500MHz G4 Power Macs—Apple doesn't control production of the chips. (They've now signed up IBM to produce G4 chips, in

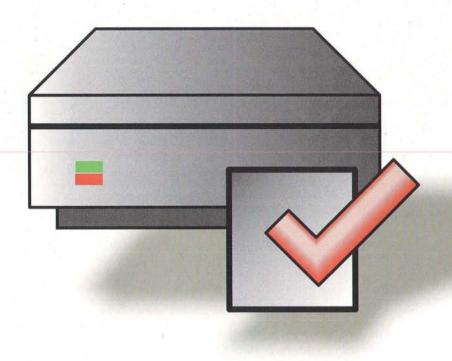
addition to Motorola, which should eventually help with supplies.) But having said that, I still don't think Mac buyers should get stuck paying the same amount and getting less. It's the 500MHz G4 chip Apple can't get, not the 400MHz or the 450MHz. By delivering slower systems for the same price as faster ones, Apple seems to be attempting to profit from its supplier's mistake, instead of just being its victim.

It would have been better if Apple had left the 400MHz and 450MHz configurations alone and downgraded the processor speed in the 500MHz

configuration. That way, the majority of Mac buyers would have gotten the G4 machines Apple promised to deliver at the price Apple promised to deliver them at. Further, buyers wouldn't have had to play yet another round in the ever changing features-and-megahertz match game. All this fast shifting around has only served to further confuse a community of Mac users that was already scratching its collective head. Where's the right G4 for you? Under one of these three shells....

Questions? Comments? E-mail them to Andy at visionthing@macworld.com.

There's only one utility in the world that does more for your Macintosh than TechTool Pro 2...



...Introducing TechTool Pro 2.5.2

MicroMat's disk repair and Macintosh troubleshooting utility just became a whole lot better. Now loaded with new features like Check Drive, which allows you to preview drive repairs before committing changes to your disk. Or the new Rebuild Directory feature that lets you manually optimize and repair drive directories, which not only makes your Macintosh run smoother but makes drive access noticeably faster. TechTool Pro 2.5.2 also now supports new technologies like System 9, "Pure" HFS+, all of the latest Macs and much more. But the real power of TechTool Pro 2.5.2 isn't in the

features you can see, it's in the features you can't see. Like a multitude of new drive repair routines that can save data that other utilities would simply abandon. An improved recovery system that will find lost files in the darkest caverns of a damaged drive. You'll also find improved performance on key features like disk optimization. But maybe the feature you'll find most interesting about this version is the price: FREE*. If you own any prior version of TechTool Pro 2, just go to our web site and grab the updater**. You'll be glad you did.

MicroMat Inc. 800-829-6227 707-566-3831 FAX: 707-566-3871 info@micromat.com www.micromat.com













^{*} Version 2.5.2 is available at no charge to registered TechTool Pro 2 users as an updater application directly from the MicroMat web site. If you do not wish to download the updater or would prefer a new CD, they can be purchased for \$25 plus tax, shipping and handling by calling the phone number above. Please have your serial number ready when calling. Prices subject to change without notice.
** Version 2.5.2 is scheduled to be released when Apple releases System 9.

AGW3

systems

Motorola and IBM Reveal PowerPC Plans

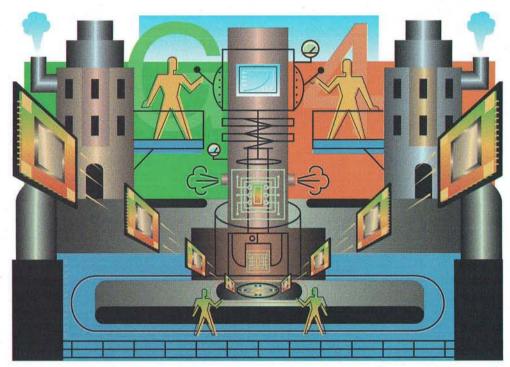
MOTOROLA DISCUSSES FORTHCOMING POWERPC G5 PROCESSOR

by Stephen Beale

s Apple, IBM, and Motorola deal with the fallout from Apple's recent downgrade of its Power Mac G4 systems (see "A Downgrade for the G4" in this section), the companies are already making plans for a new generation of PowerPC processors that will blaze at speeds of up to 2GHz.

Motorola revealed its strategy for future PowerPC processor development during October's Microprocessor Forum in San Jose, California. The company says it is currently testing PowerPC G4 processors with AltiVec technology running at up to 700MHz. Eventually, Motorola says, the G4 design will hit speeds of up to 1GHz.

Waiting in the wings is the PowerPC G5, a 64-bit chip that will also support 32-bit processing to ensure compatibility with current applications. The G5, likely to be available in one to two years at speeds of up to 2GHz, will feature an extensible architecture, making it easier to develop specialized versions



of the chip. Motorola says it will also offer a G6 processor, but has given no details on planned features.

Motorola plans to offer G3, G4, and G5 processors concurrently. In addition to developing the chips for Apple's Power Macs, Motorola will also target the growing market for embedded processors, which are used in a wide range of electronic devices.

Damage Control While Motorola was busy laying out its processor road map, the company found itself performing damage control when Apple cited a shortage of 500MHz G4 processors as the main culprit behind the recent downgrade of its Power Mac G4 systems. In September, Apple predicted lower earnings due to an unexpected shortage of Motorola's G4 processors. Motorola issued a statement that pointed the finger back toward Cupertino, asserting that Motorola had regularly kept Apple apprised of G4 availability.

A month later, after Apple downgraded its systems and brought on IBM as an alternative supplier of G4 processors, Motorola appeared to eat some crow. In a terse statement released to the press, the company said, "Motorola continues to ramp G4 production to a higher volume each week and we are steadfastly committed to meeting our production goals for Apple Computer, and for all of our customers using this continues

exciting new product. We are disappointed that we have not been able to meet all of Apple's demands to date, and are working diligently to rapidly remedy the shortfall. As we have said before, this is a temporary situation."

Big Blue Meanwhile, IBM has its own plans for the PowerPC architecture. Although Motorola and IBM have both contributed to the PowerPC design, each is free to develop its own chip flavors, which is why IBM only recently signed on to manufacture G4 chips with Motorola's AltiVec technology. IBM will begin supplying the chips in the first half of 2000.

IBM manufactures its G3 -and now its G4-chips with copper wiring instead of the aluminum used in Motorola's G3 and Intel's Pentium. Motorola has licensed IBM's copper technology for use in the G4 and will apparently employ copper in its future chip designs. Copper-based chips have the potential to run faster than equivalent aluminum-based chips, with less power consumption and heat emission. (Some of Apple's blue-andwhite Power Mac G3 systems include copper-based chips from IBM, while others use Motorola's aluminum-based chips, but there's no performance difference because the chips all follow the same technical specifications.)

IBM won't discuss its development plans publicly, but sources close to the company told MacCentral that Big Blue still sees potential in the G3 processor and plans to offer versions running at up to 800MHz. These chips could find their way into future laptops; the current G4 design is too power hungry for use in portables, and Motorola has not said whether it plans to develop a low-power version of the

A Display You Wear on Your Head



IT MAY LOOK LIKE A REFUGEE FROM a Ray-Ban catalog, but the \$2,699 Glasstron PLM-S700 from Sony (800/352-7669, www.sony.com) is actually a head-mounted computer display that places a 0.5-inch LCD in front of each eye. Sony claims that the device creates the illusion of watching a 52-inch monitor from a distance of 6.5 feet. The 3.5-ounce display includes rechargeable lithium-ion batteries and built-in earphones.—MACWORLD STAFF

processor. IBM sources also told MacCentral that the company is developing a low-cost version of the G3 that will sell for less than \$100 in production quantities.

Although there's no telling when the new chips will find their way into Apple's Power Mac systems, Apple generally offers a 100MHz speed bump every six months or so, assuming the processors are available in sufficient quantities.

systems

A Downgrade for the G4

APPLE RECONFIGURES
MAC SYSTEMS WITH
SLOWER PROCESSORS

by Stephen Beale

pple Computer, which seemed to be leading a charmed life in recent months, found itself with egg on its face in October when the company announced it was reconfiguring its Power Mac G4 product line with lower-speed versions of the chips. Instead of offering systems

with 400MHz, 450MHz, and 500MHz processors, as Apple had originally planned, the company will sell the systems with 350MHz, 400MHz, and 450MHz G4 processors at the same respective price points of \$1,599, \$2,499, and \$3,499.

Mea Culpa Apple blamed the bad news on Motorola's inability to deliver sufficient quantities of 500MHz G4 processors, and said it was signing on IBM as an alternative supplier of the chips (see "Motorola and IBM Reveal PowerPC Plans" in this section). A chastened Motorola issued a mea culpa.

The new configurations are as follows:

The 350MHz system, selling for \$1,599, includes 64MB of RAM, a 10GB Ultra ATA hard drive, and a 24× CD-ROM drive. Based on the same architecture as the blue-and-white G3 systems, this configuration was supposed to include a 400MHz G4 chip.

The 400MHz system, priced at \$2,499, includes 128MB of RAM, a 20GB Ultra ATA hard drive, a DVD-ROM drive, and an Iomega Zip drive. This configuration uses a new architecture that includes a faster memory bus, support for up to 1.5GB of RAM, an internal FireWire connection, a high-

speed AGP port for the display adapter, and connections for Apple's AirPort wirelessnetworking cards. Apple previously announced that it would offer this configuration with a 450MHz G4 chip.

The 450MHz system, selling for \$3,499, includes 256MB of RAM, a 27GB Ultra ATA hard drive, and a DVD-RAM drive. Like the 400MHz system, it uses Apple's new system architecture. Apple had planned to offer this configuration with a 500MHz G4.

Systems featuring the new 500MHz G4 processor won't appear until early 2000, Apple says.

Mixed Signals As Apple announced the downgrade, it also sent notices to inform customers who had preordered systems that it would cancel their orders. The following day, October 14, the same customers received an apologetic follow-up notice saying that their orders would be fulfilled. However, Apple PR reps confused the matter by making contradictory statements about which, if any, orders would be honored.

Finally, on October 18, Apple issued a definitive statement: if you ordered a 400MHz or 450MHz Power continues



Time matters.

The fate of the company is in your hands.

Every second counts when you're competing at Internet speed. And the faster your Web application is developed, deployed and maintained, the faster your competition will drop out of sight.

The solution? Get to market faster and easier than ever before with Pervasive Software's Tango 2000. Use Tango's powerful, multi-platform environment to develop your ideas with double the speed of any other development software. Create applications that sizzle with sophisticated personalization capabilities. Give

yourself the same competitive edge that Tango has given leading companies like Apple Computer®, theglobe.com™ and Harbor Freight Tools™.

Download your Free Tango Demo today!

Grab the time-saving advantages of Tango 2000 absolutely FREE. Visit our Web site and download our FREE fully functional Tango 2000 demo. Or call us now to get your demo on CD.

www.pervasive.com/speed or 1-800-287-4383 Hurry! This offer ends February 28, 2000.

PERVASIVE

The Freedom to Create Applications for Everyone, Everywhere

Apple Computer is a registered trademark of Apple Computer, Inc., theglobe.com is a trademark of theglobe.com, inc., Harbor Freight Tools is a trademark of Harbor Freight Tools.

TMACWD0200

Product WATCH

High-Speed MFP You've heard of workgroup printers; now Canon (800/652-2606, www.usa .canon.com) wants to sell you a workgroup multifunction peripheral. The Class 3170 Facsimile Series offers a maximum print speed of 17 ppm, up to 1200-dpi resolution, and an optional dual-line feature for simultaneous fax receipt and transmission. Prices range from \$3,195 to \$4,000, depending on selected options.

InDesign for Editors Taking advantage of the extensible architecture of Adobe InDesign, Adobe Systems (800/833-6687, www .adobe.com) has announced InCopy 1.0, a stripped-down version of InDesign that allows writers and editors to track editorial changes, fit copy, and collaborate with designers. The program, using a word processing interface, lets you work on documents in galley or layout mode. In the latter, you can see text as it will appear in print, complete with column breaks, hyphenation, and justification. Adobe won't sell the software directly; instead, it will be offered by Adobe InDesign system integrators, who will determine pricing on a site-by-site basis.

Get Reel Looking for a cheap, simple way to edit digital movies? Par Technologies (480/922-0044, www.irez.com) is shipping Reel-Eyes, a \$35 video-editing program that lets you play feature-length movies, export video to DV streams, crop videos to fixed frame sizes, and save video clips

News

Mac G4 before October 13, Apple will deliver the system at the original quoted price. If you ordered a 500MHz Power Mac G4, the company will provide a 450MHz system at the latter's original price.

printing

Lenticular Art Comes of Age

DIGITAL FINE ARTISTS

EXPERIMENT WITH OLD

PRINTING TECHNIQUE

by Stephen Beale

ou sometimes found them in Cracker Jack boxes: small, plasticcovered wafers showing an image that appeared to change or move when viewed from different angles. They're examples of lenticular printing, a technique undergoing a modest revival thanks to new digital-imaging capabilities. Using this technology, you incorporate many versions of an image into a laminated print, creating artwork that simulates 2-D or 3-D animation.

Interlaced Images Producing a lenticular print basically takes three steps. You create a series of images in Adobe Photoshop or any other painting program. Then you use lenticular-imaging software to cut each picture into thin vertical or horizontal slices that are interlaced to produce one image. After printing the interlaced image, you laminate it with a lenticular lens screen, a plastic covering embossed with tiny lenses set at different angles. The lenses force the eye to focus on only one of the interlaced images at any viewing angle. When

you change the angle, the image changes, too.

Although lenticular printing is often associated with cheap-looking novelties and marketing gimmicks, the technology can be used to produce serious artwork. At the recent Seybold San Francisco electronic publishing show, Digital Atelier (www.digitalatelier.com)—a printmaking studio founded by artists Dorothy Simpson Krause, Bonny Lhotka, and Karin Schminke—sponsored a gallery of largeformat lenticular prints.

Mac Friendly? At present, lenticular-imaging software-which includes Flip, from Flip Signs (www .flipsigns.com), and Lenticular FIX, from Lenticular Development (909/471-0468, www .lenticulardevelopment.com) -is available only for Microsoft Windows. The Windowsonly P-M1000 Motion Image Printer (\$5,500), from Panasonic (800/742-8086, www .panasonic.com/alive), produces 2-by-4-inch lenticular prints that can incorporate up to six images.

Although these are currently Windows-only prod-



ucts, you can use your Mac to create the original images—the part of the process that in most cases will be the most time-consuming. A lenticularimaging service bureau, such as 3D Sign & Design (909/471-0468, www.3dsign-design.com) can produce lenticular prints from standard image files submitted by customers.

graphics

Adobe Builds a New Web Presence

WILL OFFER WEB-BASED
GRAPHICS APPLICATIONS

by Macworld Staff

dobe Systems (800/ 833-6687, www .adobe.com), following in the footsteps of other graphics software vendors, has launched a new version of its Web site that provides a variety of services beyond simply informing users about Adobe products. The new site offers separate areas for Web, print, dynamic media, and portable document applications, each with user profiles, galleries, tips, forums, and product information. Through an enhanced version of the Adobe store, you can order Adobe software as well as thirdparty products. You can also run free Web-based applications to create a Web banner, optimize Web graphics, and create PDF files.

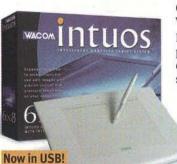
"We see this as a real opportunity to help our customers find everything they need in one place and have a place for information exchange," says Gloria Chen, Adobe.com's director of strategy and business development.

Adobe is one of several graphics developers that have spruced up their Web presence recently (see *News*, September 1999). For example, Extensis (800/796-9798, www .creativepro.com) changed its name to Creativepro.com to reflect its new emphasis on providing Web-based tools and services. And Tektronix *continues*

Powerful, fast, smartand bred for the unbridled imagination.

(No, we're talking about the Intuos graphics tablet system.)





Give your imagination full rein with the award-winning Intuos™ graphic tablet system from Wacom. With Intuos, you can sketch, paint and retouch images with natural ease and zen-like control.

Intuos, the #1 choice of illustrators, designers and photographers worldwide, features 1,024 levels of pen pressure-sensitivity. Its ergonomic design is unmatched and a pure joy for designers who demand top performance and productivity from all their graphic software. You can even add the cordless 4D Mouse or the new Intuos Airbrush for a truly customized digital toolkit.

Or choose **Graphire**, Wacom's new pen and mouse set. Its small footprint, performance features and sub-\$100 price make it a great choice for those just getting started in digital art.

Intuos and Graphire... turn your imagination loose.



800.922.2585 or www.wacom.com/imagination5







©1999 Wacom Technology Corporation. Wacom is a registered trademark and Graphire and Intuos are trademarks of Wacom Company Ltd. All rights reserved. Artwork created by Phil Howe of Seattle, WA with a Intuos 9x12 graphics tablet. Wacom products are available at www.wacom.com, CompUSA, Microcenter and other fine retail and mail order resellers nationwide. Includes @Metabatom Painter Classic. Unbridled beast not included.

Only \$99%

Product WATCH

as self-contained AVI movies. The \$99 Digital Photo Maker from Dazzle Multimedia (888/436-4348, www.dazzle.com) is a small device that lets you capture and export video on a USB-equipped Mac. The package includes two simple editing applications, Dazzle PhotoStudio for still photos and Dazzle VideoImpression for video.

Two for One Now you can have USB and FireWire and still keep a PCI slot free. The \$159 OrangeLink FireWire/USB Board from Orange Micro (714/779-2772, www.orangemicro.com) is a PCI card that includes two USB and two FireWire ports. Each FireWire port runs at 400 Mbps and provides 15 watts of power. The package includes Adobe Premiere LE.

QuickTime Jazz BitJazz (415/ 488-9626, www.bitjazz.com) is shipping PhotoJazz 2.0, a new version of its lossless imagecompression software that adds QuickTime support. The company says you can compress an image to less than half its original size with no loss of quality. The upgrade, which adds support for 16-bit image channels, includes an Adobe Photoshop plug-in, a QuarkXTension, and QuickTime components that let you embed PhotoJazz images in QuickTime movies. Three versions are available: the \$99 PhotoJazz Expert, which offers the full set of Photo-Jazz features; the \$79 PhotoJazz Pro, which supports 8-bit channels only; and the \$29 PhotoJazz Lite, which supports RGB only.

News

(800/835-9433, www.tek.com) has launched a site called Creativesite.com where artists and photographers can post examples of their work.

multimedia

Macromedia Weaves Web Upgrades

FIREWORKS MAKES NICE WITH ADOBE APPS

by Frith Breitzer

acromedia (415/252-2000, www.macromedia.com) may be learning that the best way to compete with Adobe is to beat it at its own game. With the release of Macromedia's Dreamweaver 3 and Fireworks 3, Macromedia is trying to out-Adobe its rival by improving integration with popular Adobe products.

When Adobe (800/833-6687, www.adobe.com) bundled its ImageReady 2.0 with Adobe Photoshop 5.5 essentially making the Web image editor free to Photoshop users-it was a clear challenge to Macromedia, which has focused on Web graphics. With their tight integration and similar interfaces, ImageReady 2.0 and Photoshop 5.5 are designed to draw users away from Fireworks, a popular Macromedia program that lets you create Web graphics with a combination of vector and bitmap editing tools.

Going Native Macromedia's response is Fireworks 3, which will now edit native Adobe files. You can import Adobe Illustrator and Macromedia FreeHand files with full editability, and you can export Fireworks vector graphics as Illustrator files. You can import Adobe Photoshop files with layers and editable effects, and the program now works with third-party Photoshop plug-ins, such as Alien Skin's Eye Candy.

In addition to improving integration with Adobe products, Fireworks 3 lets you export SWF files for use in Flash 4, Macromedia's popular vector animation software. You can also preview rollovers and gamma differences between Macintosh and Windows displays.

Weaving HTML The integration theme carries over to Dreamweaver 3, an upgrade to Macromedia's HTML authoring program that works with native Fireworks and Flash 4 files. In addition to importing the files

directly, you can launch Fireworks or Flash from within Dreamweaver to edit the files. When you quit Fireworks or Flash, the modified graphic gets placed in the Dreamweaver document. In this feature, Macromedia may be anticipating the next version of Adobe GoLive, which will likely boast improved synergy with Adobe's other products, including InDesign, Photoshop, ImageReady, and Illustrator.

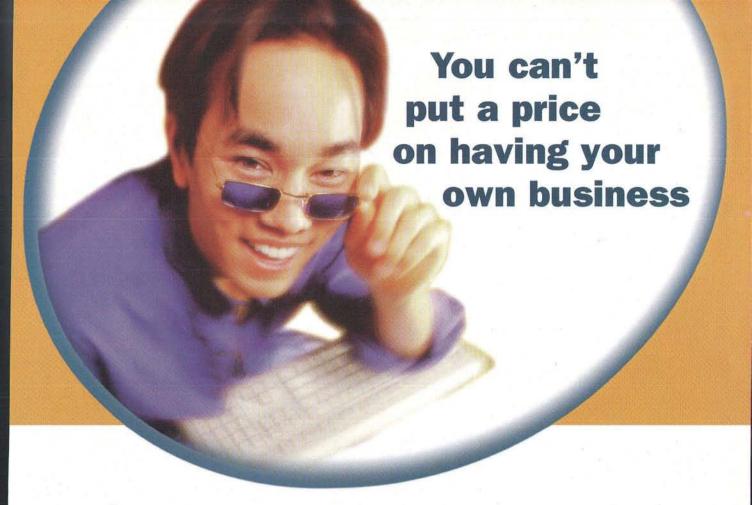
Other new Dreamweaver 3 features include local and remote file synchronization, the ability to define styles without using Cascading Style Sheets, and the ability to edit tags within the document window.

Dreamweaver 3 and Fireworks 3 are expected to ship by the time you read this.



Epson Revamps Ink-Jet Printers

EPSON AMERICA, SUDDENLY FACING STIFF COMPETITION in the Mac printer market, has announced two new ink-jet models (800/463-7766, www.epson.com). The \$279 Epson Stylus Color 860, which replaces the Stylus Color 850, produces text documents at up to 9.5 ppm and photos at up to 7 ppm. The Epson Stylus Color 760, \$199 after a \$30 rebate, prints black text at up to 7 ppm and color documents at up to 6 ppm. Both printers feature USB and parallel ports but no serial connections. Epson offers a \$159 print server for both models that allows connection to Ethernet or AppleTalk networks.—MACWORLD STAFF



because now IT'S FREE!

Vstore.com GIVES YOU ALL the tools you need to instantly open your own online store, filled with your choice of great products!

And we do mean ALL the tools for free:

- A simple, customizable store-building system
- Over 1 million products for you to sell
- High-speed hosting
- Credit card transaction management
- Customer service support and order tracking

No hassle. No overhead. No out-of-pocket. And it only takes 5 minutes.

Vstore.com pays substantial commissions on every sale, because they're your customers. Did we mention it doesn't cost you a dime? Begin your personal Internet success story today. Go to Vstore.com or call toll-free 1-877-vstore5 (1-877-878-6735).

Electronics Video Games Sporting Goods Books Movies Music and More

TO OPEN YOUR STORE, CLICK HERE:



REVIEWS

iBook

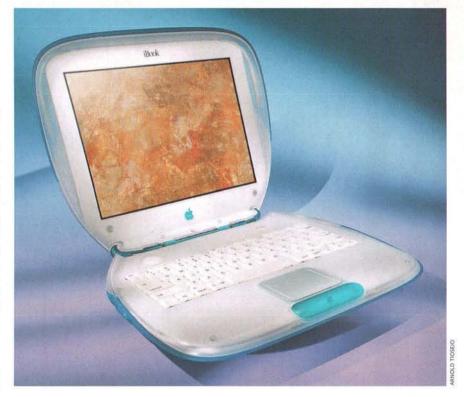
OFFERS LOTS OF STYLE
BUT LIMITED SUBSTANCE

LTHOUGH APPLE'S NEW CONsumer portable may be one of the company's most hotly anticipated products ever, the iBook's reality falls short of its mediagenerated hype. It's not exactly a case of the emperor having no clothes-the iBook is a natty dresser—but what's under that striking attire leaves something to be desired in terms of size, ease of use, and flexibility. The iBook will have some appeal for students willing to work around its limitations, but novices may find their needs better served by one of the new iMacs-or future iBook revisions that address its current drawbacks.

Dressed to Thrill

The iBook's ingenious industrial design, featuring a gently curved clamshell, white translucent plastics, and brightly colored rubber bumpers, makes the portable look small. However, it's actually larger and heavier than a PowerBook G3, weighing 12 ounces more than Apple's bronze laptops.

Part of the reason for the iBook's larger dimensions is its rugged construction—the shell and internal case are impact resistant. After a couple weeks of carting it around, we can attest to the portable's overall solidity. However, it did suffer a loose metal shield around the Ethernet port, but only after several dozen cable insertions.



Other nice touches include a sturdy handle that folds up from the back and a latchless clamshell that automatically wakes the iBook up when opened. We also like the way Apple designed the iBook's indicator lights. Rather than flashing on and off, the sleep indicator throbs. And the light that rings the power plug glows orange when the battery is charging and green when it's full. We hope Apple adds these design refinements to the next PowerBook.

Although the laptop's low-profile key-

board is about the same size as the bronze PowerBook G3's, our informal iBook jury was split: some found it uncomfortable to type on, while others found its crisp action superior to the PowerBook keyboard's.

Our jury agreed that the single speaker sounds tinny and the 12-inch active-matrix screen, while offering a crisp, bright display, seems lost in the iBook's large frame. The lack of a VGA connection precludes use of external monitors or multimedia projectors. Also missing is a FireWire port,

REAL PRODUCTS

Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

OUTSTANDING: **** VERY GOOD: **** GOOD: **** FLAWED: ** UNACCEPTABLE: **

which would allow connection of video cameras and high-speed storage devices.

RAM Makes the iBook

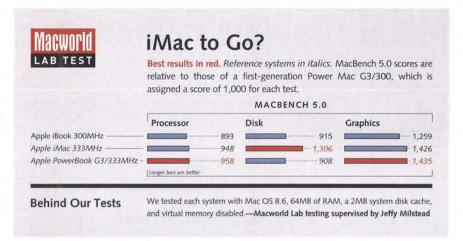
When we first booted up the iBook, we were shocked by its poky performance, especially considering that it uses a 300MHz G3 processor. Applications were slow to launch, and when switching between applications, we could see windows redraw themselves line by line. Then we found that the test unit, which had the iBook's standard 32MB of RAM (the lowest RAM allocation in any current Mac model), came preset with an additional 32MB of virtual memory. Virtual memory has long been the bane of portables, whose slower, power-frugal hard drives are often asleep when an application wants something from the drive's virtual-memory partition.

Although reducing virtual memory helped speed things up, the performance problems didn't go away until we added 32MB of physical RAM. The added memory also fixed the iBook's annoying tendency to crash. Our advice: don't even consider buying this cute and cuddly portable without add-on RAM. (Thanks to the iBook's pop-up keyboard, RAM is easy to install.)

Once we resolved the RAM issues, the iBook's performance was about what you'd expect (see "iMac to Go?"). In general, performance was a little slower than that of a 333MHz PowerBook G3. The built-in ATI Rage Mobility graphics accelerator and 4MB of video RAM offer fine display performance for standard operations, but the iBook is extremely sluggish when running such demanding 3-D games as MacSoft's Unreal.

The iBook's 3GB hard drive was also slow, but no slower than many other portable drives. However, the 3GB capacity feels a bit tight compared with the minimum 4GB in PowerBooks. The iBook has no modular bays, so you can increase storage only by adding an external USB drive or by replacing the internal drive.

Apple estimates that the iBook can run for six hours on a single battery charge, but that proved to be optimistic. In three trials using the standard Energy Saver configuration, the iBook ran for an average of four hours before losing power—about half an hour longer than the best time for the PowerBook G3. Four hours on a single battery is certainly impressive, but quick battery swapping—



a viable option with the PowerBook G3 is not possible because you have to unscrew a cover on the iBook's bottom to switch batteries.

Plug and Pray

The iBook features a single USB port for connecting keyboards, mice, serial adapters, and other components. However, USB has proved to be unreliable in Apple's portables; attached peripherals have been known to suddenly cease working, forcing you to unplug the USB connector, wait a few seconds, and plug it back in. Fortunately, most USB-hardware developers have updated their drivers to be Power-Book savvy, reducing, but not entirely eliminating, vanishing-peripheral syndrome.

We're sorry to report that the iBook shows the same tendency to lose USB devices, although as far as we can determine, USB didn't cause any system crashes. However, both test units often crashed when we attempted to wake them from sleep, a problem that disappeared when we added RAM. Making matters worse, when you use the hardware reset switch to restart the iBook, the system clock resets itself to 1/1/04, 12:01 a.m.

Since there are no media bays or PC Card slots, all you can add to an iBook—aside from external USB devices—is physical RAM and an AirPort wirelessnetworking card, which had yet to ship as we went to press.

From a software perspective, using an iBook is exactly like using a Power-Book, involving such cumbersome utilities as the Location Manager. Using portables is inherently more complex than using desktops, due to unpredictable communications connections and the need for power management. Yet Apple has done nothing to make these portables easier for novices to use.

Macworld's Buying Advice

Apple clearly had to make some compromises to build a \$1,599 portable Mac. Unfortunately, these compromises have produced a laptop that's big, heavy, and limited in its expansion options. While \$1,599 is a breakthrough price for a Mac portable, the iBook is no PowerBook-and it wasn't long ago that you could buy an original PowerBook G3 (one of the heavier, fatter ones) for \$1,999. If you compare the iBook to an iMac-as Apple suggests-then it really becomes a challenge to defend the price, considering that a \$1,299 iMac DV comes with FireWire, a DVD drive, 64MB of RAM, a 10GB hard drive, and an 8MB ATI Rage 128 graphics accelerator. We'd have a much easier time recommending an iBook if it included the 64MB of RAM needed for acceptable performance.

The iBook's industrial design is impressive, as are some refinements, such as the latchless case. For students on a tight budget who need a portable, the iBook might fit the bill, although you'll have to add at least 32MB of RAM—for an extra \$100 or so—to get a usable configuration. But our guess is that many novices will be happier with the less expensive and more full-featured iMac.—ANDREW GORE

RATING: PROS: Innovative industrial design. CONS: Big; heavy; small screen; limited configuration and expansion options; too hard for novices to use; has stability problems with base RAM configuration. COMPANY: Apple Computer (800/795-1000, www.apple.com). COMPANY'S ESTIMATED PRICE: \$1,599.

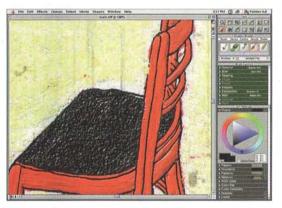
MetaCreations Painter 6

NATURAL-MEDIA PROGRAM ACHIEVES NEW REALISM

HEN YOU NEED A SET OF powerful, versatile painting tools, nothing comes close to MetaCreations Painter. Version 6 is the program's most significant upgrade in years, offering important interface changes and a completely rewritten brush engine that provides an extraordinary new level of realism.

The Big Squeeze

Painter's infamous palette-heavy interface hasn't become a model of spareness, but MetaCreations has streamlined and consolidated the program's vast number of options. It now divides the bulk of controls among the Objects, Brush Controls, and Art Materials palettes. Subcategories, stacked atop each other, expand to reveal each palette's controls. For example, the



Lay It On Thick Painter 6's new Impasto tools create thick, viscous 3-D ink you can push and smear around the canvas.

Brush palette's 14 subcategories include Size, Spacing, and Angle controls. This may sound complicated, but it's much better than in previous versions, which contained separate palettes for many options.

Other improvements include new Adobe Photoshop-like Layers. Painter has long let you maintain separate elements as *floaters* but has never made it possible to organize a painting into discrete layers. Now you can rearrange, lock, hide, and group layers, as well as open and save layered Photoshop files.

Painter's interface still has its cumbersome moments, however. For example, although the Brush Controls palette contains most of the controls for configuring a brush, a few options are hidden under a menu bar in the Brushes palette. We'd prefer to see them in the main menu bar.

Painter doesn't have a learning curve so much as an experience curve. To really understand and appreciate all the program offers, you'll need to use it—a lot.

Strokes of Genius

Painter's defining feature has always been its set of natural-media tools, mimicking real-world media. With the brushes in previous Painter versions, as in most paint programs, you applied dabs of colored pixels to the online canvas. To get the appearance of paint strokes, you put dabs close together. Although this technique looks fine at a glance, it can present problems such as broken lines and repeating patterns. Moreover, this method cannot emu-

late some real-world effects.

Painter 6's completely rewritten brush engine uses new algorithms that eschew paint dabs for real, continuous lines. Although some brushes still use dabs of pixels, many new ones render separate lines for each brush hair. This technique reduces the artifacts the previous brush method created, and produces smooth, antialiased strokes that rotate to follow the direction of your brush.

Real-world painters accustomed to loading their brushes with paint (that is, letting their

brush absorb colors already on the canvas) will love the new Brush Loading feature. With it, brushes can create smooth, realistic blends and smears that interact with underlying colors. Of course, such real-time calculations can tax your Mac. Painter 6 did a good job following our paint strokes; however, even our 350MHz Power Mac G3 turned rather sluggish with the large brushes.

If you hold Painter's airbrushes in one location, they now continue to deposit paint; if you're using a tablet, the airbrushes respond more realistically to tilt and bearing. Where previous versions always applied paint in a circle, Painter 6's airbrushes understand that if you tilt your

pen to the side, they should apply paint in a cone-shaped fashion with less-even distribution. The effect is incredibly realistic.

Painter 6 supports Wacom's Intuos tablets, and more tools respond to tablet controls. The Image Hose, for example, lets you scale and orient nozzle images through pressure and tilt.

Although Painter's brush control and variety are unsurpassed, we would like to see a few additions, such as Photoshop-like brushes for simple retouching and for quickly filling in areas with a solid color. And after six revisions, Painter still won't allow you to use the shift key to restrain your brushstroke to a straight line—a standard Mac convention that has been around since MacPaint.

Tools and Tweaks

The Dynamic Text feature adds a complete text environment to Painter. Along with full scaling, shearing, tracking, and leading, it provides excellent text-on-apath controls. Interactive Bézier handles bend and curve text easily. The various curvature styles let you choose whether to curve only the baseline or both the baseline and the tops of letters, for example. Automatic drop shadows and blurring are also available. Unfortunately, there's no Undo in the Dynamic Text feature, nor can you kern individual letter pairs.

Perhaps the program's coolest—and funnest—new feature is the set of Impasto tools, brushes that lay down thick, viscous 3-D ink you can build up, push down, and mush around the canvas. Full specular highlights and visible brushstrokes create a realistic, dynamic image.

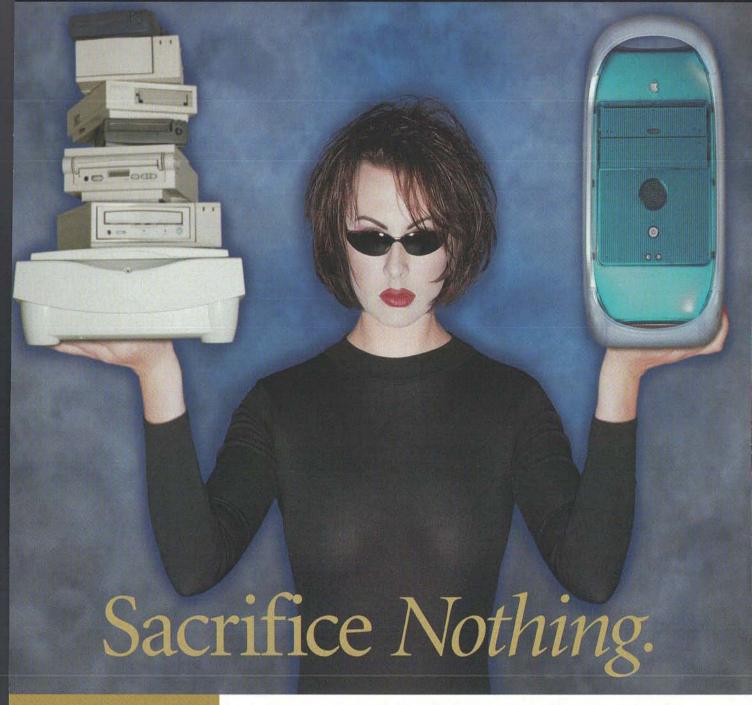
Macworld's Buying Advice

Painter's brushes and tools have always been startlingly realistic, but those in version 6 make you realize how much realworld functionality the program was missing. Along with the improved interface, they make Painter 6 a worthwhile upgrade. New users may find the tool set daunting, but the program's output is worth the effort.—BEN LONG

RATING: **** PROS: Much improved brush controls and brush performance; improved interface. CONS: Overwhelming number of controls; interface still somewhat disorganized. COMPANY: MetaCreations (800/846-0111, www.metacreations.com). LIST PRICE: \$399.

We move the information that moves your world. Gadaptec







Jo ahead, upgrade to that new G3 without sacrificing the SCSI peripherals you depend on. And in case you didn't know, Adaptec® SCSI cards support Apple's old SCSI Manager and newer SCSI Manager 4.3 devices so you can connect to whatever SCSI peripheral you might be using. But it gets even better. Adaptec SCSI significantly outperforms Apple's previous built-in SCSI, enabling your Jaz, scanner, and other peripherals to operate at peak performance. So if you want to upgrade to a new blue G3 without sacrificing anything, get an Adaptec SCSI card. For more information visit www.adaptec.com/mac.

© 1999 Adaptec, Inc., All rights reserved. Adaptec, the Adaptec logo, the Adaptec tagline, and PowerDomain are trademarks of Adaptec, Inc., which may be registered in some jurisdictions. Apple and Mac are registered trademarks of Apple Computer, Inc., used under license. All other trademarks are property of their respective holders.

Gigabit Ethernet Cards

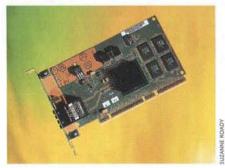
FAST NETWORK CARDS RUN INTO CPU BOTTLENECK

OW THAT 100-MBPS DESKTOP Ethernet connections have become commonplace, network administrators are looking for the next silver bullet to improve network performance. Gigabit Ethernet, also known as 1000BaseT, running at ten times the speed of 100BaseT, promises to be that silver bullet. Alas, today's Mac CPUs can't achieve Gigabit's full potential. Even on a Power Mac G3, the fastest speed attainable with Gigabit Ethernet is barely twice the speed of 100-Mbps Ethernet. Still, as CPUs gain speed, they'll be able to take advantage of improved network performance. To that end, we checked out three Gigabit Ethernet PCI cards: Asanté Technologies' AsantéFast 1000 GigaNIC, Farallon's PN9000-SX, and Team ASA's Stallion GE-II.

All three products are easy to install: just plug in the card, load the drivers, and reboot. Hooking up the cards' fiber-optic connections is as simple as with copper Ethernet, but you can run the wires much farther: up to 500 meters.

The CPU speed limits Gigabit Ethernet performance because of the processing overhead. Standard Ethernet packets are a maximum of 1,500 bytes long, which means a computer must process more than 80,000 packets every second to achieve Gigabit Ethernet's full throughput. It turns out that a Power Macintosh G3 can process only about a fifth of that, limiting performance to less than 100 Mbps. To circumvent this problem, Gigabit Ethernet supports larger packets—called jumbo frames—of up to 9,000 bytes

each. With these larger frames, theoretically even a G3 Mac can move data at a gigabit per second. Unfortunately, the Mac OS doesn't yet support jumbo frames, so this capability is largely unusable. Team ASA bundles a utility that lets



Team ASA's Stallion GE-II

you transfer files using jumbo frames, but you can't mount volumes or copy files through the Finder, and the program won't run under Mac OS 8.6.

All three products provide performance-boosting aids, including offloaded TCP/IP checksum generation and full-duplex communication. Asanté supports the Ethernet 802.3 p and 802.3 q quality-of-service standards, especially useful in multimedia networks. Team ASA's card ships with Mac OS X drivers.

On-board diagnostic aids are a big help in troubleshooting network woes. Asanté's GigaNIC excels here, with six status indicators for power, link, transmit, receive, bus type, and flow control.

The most common application for

Gigabit Ethernet is in high-volume servers; a single 1000BaseT card is easier to configure and manage than multiple 100BaseT cards and has the potential for better performance. With that in mind, we tested each card using a mix of client-server file transfers (see "Faster, but Not by Much"). Team ASA had the best showing, hitting 91 Mbps, with the Asanté card a close second. The Farallon card was somewhat slower. However, keep in mind that gigabit performance is largely a function of overall system speed. On faster CPUs, you'll see better throughput.

Macworld's Buying Advice

If your servers are running rough at 100 Mbps, consider upgrading to Gigabit Ethernet. You'll have to invest in a gigabit-capable Ethernet switch as well, so this won't be inexpensive. Team ASA's Stallion GE-II card is zippy, and the only one in our roundup that supports OS X, but it suffers from weak documentation and online support. Mac users on a small budget are better off with Farallon's PN9000-SX; the manufacturer's excellent support more than compensates for the card's slower speed. The AsantéFast 1000 GigaNIC, while the priciest card, is fast and well designed, and it includes advanced features that may be useful in a multimedia environment.-MEL BECKMAN

AsantéFast 1000 GigaNIC

RATING: \$\$\$\$\$ PROS: Excellent performance; helpful status lights. CONS: Expensive; no jumbo-frames utility. COMPANY: Asanté Technologies (800/566-6680, www.asante.com). COMPANY'S ESTIMATED PRICE: \$1,295.

Farallon PN9000-SX

RATING: **** PROS: Excellent documentation. CONS: Slow performance; minimal status lights; no jumbo-frames utility. COMPANY: Farallon (800/613-4954, www.farallon.com). COMPANY'S ESTIMATED PRICE: \$949.

Team ASA Stallion GE-II

Faster, but Not by Much Best results in red. Reference configuration in italics. 1GB File Copy (in Mbps) AsantéFast 1000 GigaNIC Farallon PN9000-SX Team ASA Stallion GE-II Built-in 10/100BaseT Ethernet For detailed information on our tests, see the review online at www.macworld.com/2000/01/reviews/.—Macworld Lab testing supervised by Kevin Mitchell



One click puts your business on the Web!

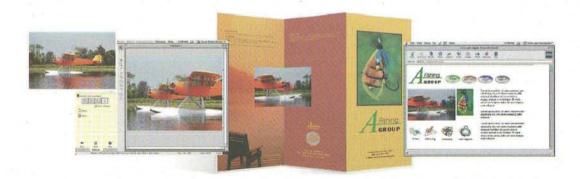
Introducing Corel Print Office™ 2000 for Macintosh®—the easy way to give your business widespread exposure. Create professional-looking business material that will set your company apart, then publish it to the Web* with the click of a button!



Easily create:

- Web sites
- Brochures
- Business cards
- Newsletters
- Raffle tickets
- Flyers

... and more!





FREE!" Corel® Stock Photos

Receive \$50 US worth of Corel Stock Photos when you register online* through Corel Print Office 2000 for Macintosh.

Also available for the PC.

*Internet access required.

**You must purchase Corel Print Office 2000 for Macintosh between Aug. 29 and Nov. 1, 1999, and register by Nov. 15, 1999. You cannot register through Corel's Web site.

Copyright © 1999 Corel Corporation. All rights reserved. Corel, Corel Print Office and the Go further logo are trademarks or registered trademarks of Corel Corporation or Corel Corporation Limited. Macintosh and the Mac logo are trademarks or registered trademarks of their respective companies.



PC Emulators

VIRTUAL PC AND BLUE LABEL POWEREMULATOR

URE, PCS ARE DIRT CHEAP these days, but do you really need another computer? Even if you occasionally-or regularly-use PC applications, PC-emulation software for your Mac can save you from purchasing a beige box or Windows laptop. Connectix's Virtual PC 3.0 and Lismore Software Systems' Blue Label PowerEmulator 1.5 both run PC software on a Power Mac, but otherwise they are very different pieces of software.

Both packages use software and the PowerPC's processing muscle to create a fake PC, tricking Windows applications into thinking they're running on a real 80X86 machine. However, the differences between the two packages are stark. You can buy Virtual PC 3.0 in versions that include either DOS only or Windows and DOS. Blue Label forces you to install your own copy of Windows. Virtual PC lets you run PC software inside a Mac window or full screen; Blue Label offers only the latter option. If you're running under Mac OS 9, Virtual PC lets you use PC USB devices, including those with no Mac drivers. Blue Label doesn't support USB.

Virtual PC has numerous functions for sharing data between Mac and PC environments, including shared folders, drag and drop, and-new in this version—the ability to use AppleScript to launch and interact with PC applications. Blue Label offers only limited



Flexible Setup Connectix's Virtual PC 3.0 lets you set up multiple volumes, each running a different OS.

provisions for accessing files on Mac hard drives.

Blue Label's configuration interface is also highly modal and nonintuitive. Virtual PC is much more flexible, making it easy to set up and use multiple independent boot "drives," each with a different OS or application set. One of our test systems sports four configurations: Windows 98, Windows NT 4, Windows 2000, and Linux. Indeed, we were able to install and run Red Hat Linux 6.1 out of the box, as well as a beta version of Windows 2000. Virtual PC can also share the Mac's Internet connection, precluding the need for a separate IP address.

Although Virtual PC can run Windows NT 4 applications, the software's Mac-integration features are available

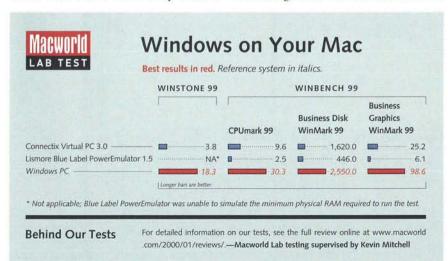
only for Windows 95 and Windows 98. However, some applications, such as Microsoft Internet Explorer 5.0, ran faster under NT than under Windows 98.

The bottom line, of course, is performance, and while neither program compares favorably with a real PC (see "Windows on Your Mac"), we found Virtual PC's speed on 350MHz and 400MHz blue Power Mac G3s to be adequate for most applications we tested.

The Blue Label software was much more sluggish, and also less stable: we experienced frequent crashes under PowerEmulator and hardly any under Virtual PC. However, neither program does a great job of running graphicsheavy applications, and while both support Voodoo 1 and 2 graphics-accelerator cards, contemporary PC games are so CPU-intensive that we can't recommend either product for serious gaming.

Macworld's Buying Advice

Blue Label PowerEmulator 1.5 provides good value, considering its low price, but its lackluster performance, cumbersome user interface, and inferior Macintosh integration make it difficult to recommend. Virtual PC 3.0 is a mature and feature-rich product that meets the needs of anyone who wants to run typical PCbased productivity applications. Web developers who need to verify how pages render with various PC browsers and operating systems will especially like Virtual PC's flexible configuration options. Users who run PC applications under a single operating system will be equally happy with its improved network integration.—STEPHAN SOMOGYI



Blue Label PowerEmulator 1.5

RATING: ## PROS: Low cost. CONS: Cumbersome interface; slow, unstable performance; takes over Mac screen. COMPANY: Lismore Software Systems (www.lismoresoft.com). DIRECT PRICE: \$29.95.

Virtual PC 3.0

RATING: *** PROS: Multiple configurations; shares Mac's IP address. CONS: No Windows NT or 2000 integration; slower than a real PC. COM-PANY: Connectix (800/950-5880, www.connectix .com). COMPANY'S ESTIMATED PRICE: \$179.

Enter the Creative Zone

Weight Mach and Bookin Users land to the state of the sta

Print House

or Macintosh*

Creative Projects and Photo Editing Made Easy



Visit www.corelprinthouse.com for more information. Or call 1-800-77-COREL.



HP DeskJet 970

HP'S LATEST INK-JET PRINTER TRUMPS THE COMPETITION

NTIL RECENTLY, BUYING AN ink-jet printer for the Mac meant checking the Epson catalog for the Stylus Color or Stylus Photo model that would best fit your needs. Hewlett-Packard and other ink-jet manufacturers had largely abandoned the Mac market, and Epson's high-quality color output was a good match for graphicsconscious Mac users. Now HP is back, and its latest model, the DeskJet 970, is likely to cause some sleepless nights for the folks at Epson. It's not the cheapest printer you can buy, but it offers an unbeatable combination of speed, versatility, and output quality for an affordable \$399.

Specsmanship

Given the latest advances in ink-jet technology, most printers sold these days offer output quality that would have made jaws drop a few years ago. Nevertheless, this model raises the bar a notch or two, especially considering that it uses four colors as opposed to six in Epson's Stylus Photo models. If you print on glossy media in HP's new enhanced photo modeproducing the equivalent of 2,400-by-1,200-dpi output-images rival those you would get back from a photo lab, with crisp detail and vibrant but not oversaturated colors. Yet even when printed at 600 dpi, the images look great. As with most printers, however, to get the most accurate color you may need to tweak settings via the built-in color-management software.

Although 2,400 by 1,200 dpi yields the best output quality, the DeskJet 970 isn't too shabby at lower resolutions. Even images printed at 300 dpi on glossy paper looked surprisingly good, although we did notice minor banding in some areas. We were also pleasantly surprised by the printer's plain-paper output, especially at 600 dpi. We saw serious banding when printing photos on plain paper in the 300-dpi draft mode, but text quality, even at the lowest resolution, was excellent.

The printer's technical specifications are similar to those of Epson's Stylus Color 900 (see *Reviews*, June 1999), and comparisons between the two models are inevitable. Each is a four-color printer that's capable of producing color pages at up to

10 ppm (12 ppm for black), and each is versatile, able to print text documents and full-color images at a high quality level. However, that impressive 10-ppm performance spec assumes you'll be printing at a low resolution, 180 or 360 dpi on the Stylus Color 900 and 300 dpi on the DeskJet 970. If you want the best-looking photos, you'll have to boost the resolution, and that slows the printing process considerably.

This is where the DeskJet 970 stands out. Both printers offer roughly the same output speed at their highest resolution—2,400 by 1,200 dpi for the HP printer and 1,440 by 720 dpi for the Stylus Color

AND SHAPE OF THE PARTY OF THE P

900—producing a full-page Adobe Photoshop document in about 10 minutes. However, the DeskJet 970 can match or exceed the Stylus Color 900's maximum image quality even when printing at 600 dpi, and at this resolution, it took just 5 minutes to produce our Photoshop document on the HP printer. The bottom line is that the DeskJet 970 produces great-looking photos about twice as fast as the Stylus Color 900, and even better-looking photos if you're willing to wait a little longer.

Attention to Detail

The DeskJet 970 sports many other nice touches, including a print-cancel button and a low-ink indicator, both on the front panel, as well as a 150-sheet paper tray. It's the first low-cost ink-jet model to provide automatic two-sided printing (also known as duplexing), although

you'll need thick paper to avoid bleedthrough when printing images. The DeskJet 970 is also one of the quietest printers we've ever tested.

HP has largely avoided jumping on the iMac industrial-design bandwagon, but the DeskJet 970's curved surfaces and elegant dark-gray color scheme certainly break the mold of boxy beige peripherals.

The DeskJet 970's printer software lacks the range of color and layout controls you'll find in Epson's ink-jet printers, but it does provide access to all basic print features, including two-sided output. In addition to supporting Color-Sync, the printer software offers a simple built-in color-matching function that allows you to adjust saturation, brightness, and color tones.

The printer features built-in USB and parallel interfaces, but if you use an older

Mac with a serial port, you're out of luck; HP has firmly committed to USB as the interface of choice for the Mac. HP offers AppleTalk and Ethernet connectivity through the optional \$259 JetDirect 300X External Print Server. At present, HP doesn't offer a Post-Script option, but it's likely that other companies will offer software that converts the DeskJet 970 into a PostScript printer.

Macworld's Buying Advice After years of ceding the Macintosh ink-jet market to Epson, HP has roared back

with a printer that sets new standards for quality and performance. Some users may find its speed makes it a suitable replacement for a color or monochrome laser printer, although you will pay more for ink-jet consumables. If you have an older Mac without USB, or if \$400 is beyond your budget, consider one of Epson's current models. But if you're seeking a \$400 ink-jet printer that works with USB-equipped Macs, this one's a no-brainer: Buy the DeskJet 970.—STEPHEN BEALE

RATING: *******/2 PROS: Fast; quiet; versatile; prints great-looking text and images; has automatic duplexing mode. CONS: No serial port. COMPANY: Hewlett-Packard (800/552-8500, www.hp.com). COMPANY'S ESTIMATED PRICE: \$399.





Your Village.



10 Years of Cool Macintosh Products.

www.globalvillage.com (800) 336-2009

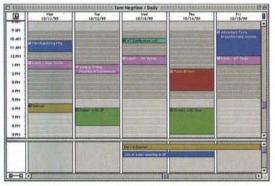
And We're Just Getting Started...

Circle 106 on card or www.macworld.com/getinfo

Meeting Maker 6

ACCESS YOUR CALENDAR EVERYWHERE—AT A PRICE

ITH NETWORKED OFFICES becoming the norm these days, groupware applications, such as multiuser calendaring, have turned into big business. Unfortunately, market leaders Lotus Notes and Microsoft Exchange have left Mac clients out of their network dance. Now Up-to-Date and Now Contact were a complete Mac solution, but suffered from years of neglect after Qualcomm acquired Now Software (new owner



Drab Appearance Meeting Maker 6 does a good job of scheduling, but its user interface is overdue for a face-lift.

PowerOn Software promises an update by the end of 1999). The only company that has kept the faith is On Technology with Meeting Maker, which runs equally well on the Mac; Windows 95, 98, and NT; and Solaris. Meeting Maker 6 adds Palm synchronization capabilities and a Java client that can access your schedules through a Web browser. However, it still suffers from a drab interface.

Client-Server Without Tears

Meeting Maker's server component, which handles an unlimited number of users, can run on all the supported platforms, with modest system requirements. Any Power Mac past the 7600 will do, and Windows servers can get by with a 486-based machine. Client requirements are even more minimal. On Technology claims that a Macintosh Plus or better will do the trick; however, we didn't test any 680X0 clients.

Installing the Mac server with Mac and Windows clients was painless, taking less than an hour. However, migrating from Now Up-to-Date to Meeting Maker was considerably more difficult than the manual indicated. Meeting Maker's Calendar Converter utility did not automatically recognize the Now Up-to-Date export file, and importing failed because Meeting Maker can't handle the latter program's open-ended events (those that have a start time but no end time). We had to delete the misunderstood items manually from the export file.

Once set up, Meeting Maker does

an excellent job of proposing meetings, scheduling activities, and arbitrating among people's schedules. Potential attendees can accept or decline meetings via messages sent over the LAN or through Internet e-mail. The program also supports Proxies—users, such as a boss's assistant, who can propose and accept meetings on behalf of others. One minor problem is that the program assumes all clients are in the same time zone as the server. If you are not, you'll

have to compensate for time zone differences when scheduling—the software won't do it for you.

New in this version is the ability to synchronize with Palm handheld organizers. We had no problems synchronizing Meeting Maker data to a variety of Palm devices, but some Meeting Maker event attributes, such as location, have no equivalent in the Palm software, so naturally they don't get synchronized. To use the synchronizing feature, you'll also need Palm Desktop 2.0 or later.

Managing Large Crowds

Updating client software for hundreds of users can be a headache for network administrators, but Meeting Maker 6 makes it easy. After you have upgraded the server, the program installs new client software on client Macs or PCs whenever a user connects to the Meeting Maker server. You still have the option of posting client software to a file server for manual installation. This has the added benefit of preventing a flurry of network

activity when users log on the morning after the server upgrade.

We ran Meeting Maker 6 on three Macintoshes, a PC running Windows 98, and another PC running Windows 95. To gauge the software's performance in a large corporate setting, we also spoke with network administrators who were using Meeting Maker in configurations ranging from 70 to almost 1,000 users. Meeting Maker's performance pleased them all, even on older hardware. For example, Apple Computer's own installation features a Power Mac 8500/180 serving more than 700 Mac clients on Apple-Talk and TCP/IP; the administrator believes the dedicated server is far from reaching its limits.

Although On Technology has done a good job of adding new features and improving the software's performance, the company needs to work on Meeting Maker's tired-looking user interface, which seems barely changed since we last reviewed this program in 1995. Of the different platforms' client interfaces, the most attractive is the Java client for use in Web browsers.

Meeting Maker clients come in packs of 10, 50, and 100 users, which you can mix and match among platforms as you wish. Clients cost between \$85 and \$95 each, depending on volume, with discounts for educational, nonprofit, and government organizations.

Macworld's Buying Advice

With a basic installation costing close to \$1,500, Meeting Maker is not cheap, but it is one of the few choices left to Mac partisans in the multiplatform, multiuser scheduling category. Scaling smoothly from the branch office to the corporate enterprise, the program also handles mobile computing needs with its Palm synchronization. For companies that want to share schedules among Mac, Windows, and Unix machines, Meeting Maker 6 can't be beat.—TOM NEGRINO

RATING: **** PROS: Excellent scheduling and meeting notification; good Palm synchronization. CONS: No client-side time-zone setting; some import problems; dated user interface. COMPANY: On Technology (781/487-3300, www.meetingmaker6.com). COMPANY'S ESTIMATED PRICE: Server pack, \$499; ten-user pack, \$950.





INTRODUCING THE POWERFILE C200.



200 DISC CAPACITY CD/DVD CHANGER DUAL CD/DVD-ROM DRIVES
HIGH-SPEED FIREWIRE (IEEE-1394) CONNECTIVITY MAC & WINDOWS COMPATIBILITY
OVER 1 TERABYTE CLIENT/SERVER LIBRARY MANAGEMENT SOFTWARE INCLUDED

- \$1,499 -

WWW.DVDCHANGER.COM

1-877-219-4888 (TOLL-FREE)

Reviews

Palm IIIe Organizer

AFFORDABLE ORGANIZER

HE PALM III HANDHELD ORGAnizer built on the success of earlier Palm models with its infrared-beaming capability. The Palm IIIx took things to the next level with an expansion slot and an improved display. However, both came with premium prices that placed them out of reach for most consumers.

The Palm IIIe changes that. Selling for just \$199, it lacks the Palm IIIx's expansion slot but features the great display and infrared capability you'll find in its siblings. In addition to a gray model, some U.S. stores are offering a Special Edition, also for \$199, that features a transparent case. With the release of the IIIe, Palm has also reduced the IIIx's price from \$369 to \$299.

So what do you give up with the Palm IIIe? The IIIx's expansion slot provided an extra 2MB of RAM, but unless you need to store large databases, you really don't need all that memory. The IIIe's built-in 2MB of RAM lets you store thousands of contacts and to-do items, with plenty of room left over. The lack of an expansion slot even allows for greater reliability: because there is no expansion slot in the



Palm IIIe, there is no RAM card to come loose after repeated bumps and drops.

Our biggest complaint about the Palm IIIe is the stylus. Instead of the IIIx's metaland-plastic stylus, you get a cheap-looking, solid black plastic model. It's not just a matter of aesthetics: the better stylus's removable top conceals a convenient reset pin, which comes in handy if you run an application that causes the Palm to crash or freeze. Palm offers a \$9.95 three-pack of the high-quality styluses, which we recommend.

Although the Palm IIIe includes an infrared port, it currently won't let you synchronize with Palm Desktop software.

However, you can use it to exchange files with other Palm organizers, and Palm plans to release a version of its infrared software that will support HotSync operations.

Unlike the well-publicized Visor from Handspring, which features a USB connection, all Palm devices are serial-only, which means you'll need to purchase a USB-toserial adapter to sync with Mac models that lack a serial port (adapters sell for \$35 to \$80). Like other Palm handhelds, the Palm IIIe doesn't include Mac-savvy directions, nor does it come with Mac software. However, Palm's MacPac 2 desktop-synchronization software is available for free download from Palm's Web site.

Macworld's Buying Advice The Palm IIIe is a solid handheld organizer based on a proven platform. Handspring's \$179 Visor, which includes a USB cradle and Mac software, may seem like a better deal, but until it ships, it's unproven technology. The Palm IIIe simply works, and it does so at a great price.—JEFF PITTELKAU

RATING: **** PROS: High-contrast screen; affordable. CONS: Mac software and serial and USB connections optional. COMPANY: Palm Computing (408/326-5000, www.palm.com). LIST PRICE: \$199.

Adobe Photoshop 5.0 LE

LIMITED EDITION TARGETS MIDRANGE USERS

ow There's an adobe Photoshop for the rest of us: businesspeople, digital-photo hobbyists, even a reviewer's 11-year-old son. Adobe Photoshop 5.0 LE is a \$99 graphics tool that falls between Adobe PhotoDeluxe—a low-end image editor bundled with many scanners and digital cameras—and the full Photoshop 5.5. It offers many useful functions you won't find in the former but lacks the extensive feature set and high price tag of the latter.

With Photoshop LE, you can simulta-



Basic Building Blocks Photoshop 5.0 LE provides the same painting tools found in the full version.

neously open multiple images, apply most Photoshop filters and image-correction operations (including Variations), and employ the same painting and selection tools found in the full version. However, Photoshop LE works only in gray-scale, Indexed Color, and RGB color modes; if you're a print professional who handles CMYK images, you'll need the full version. You can't edit individual color channels or add alpha channels, but using the Layer Mask feature, you can create masks that act like alpha channels. You can generate as many as 99 layers (with variable transparency and multiple blend modes), but you can't apply the full version's layer effects. If you need a drop shadow, you'll have to create it manually or use a third-party plug-in.

Photoshop LE has a limited Text tool reminiscent of the one in Photoshop 4.0X. When you add text, it is automatically placed on its own layer, making it easier to change opacity or create other effects. However, once you have created the layer, you cannot edit the text. On the plus side, Photoshop LE includes a Type Mask tool that makes it easy to

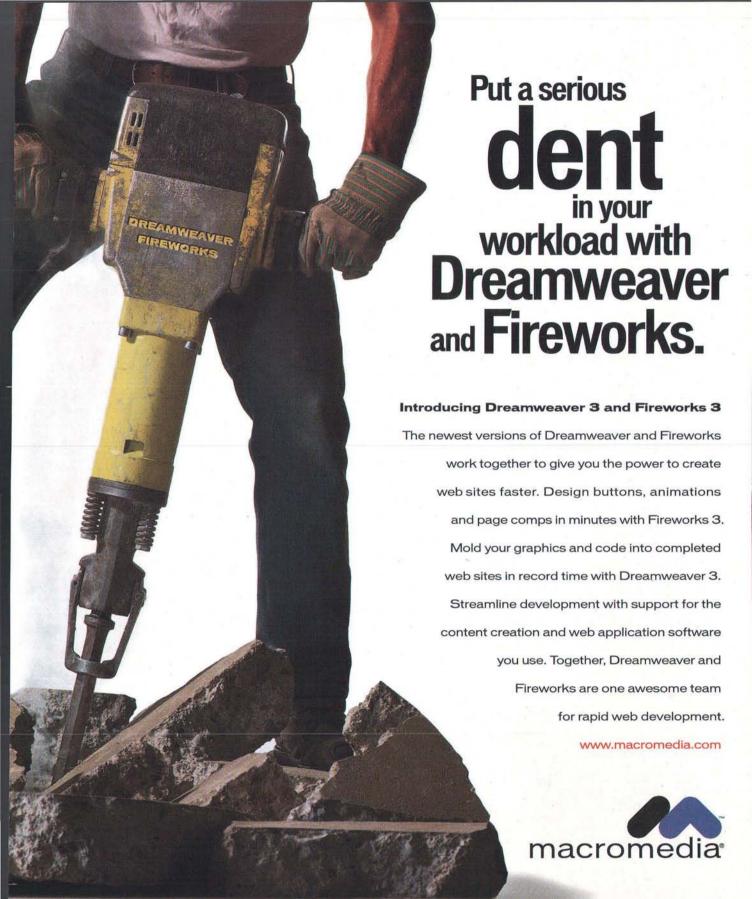
create selection marquees for text outlines.

Also missing from Photoshop LE are Photoshop's History and Actions palettes. Without a History palette, you're limited to one undo, and the lack of an Actions feature means you have to perform repetitive tasks by hand. However, most users who need batch-processing capabilities are probably graphics pros who would be better off with the full version.

Photoshop LE can save files in any format supported by the full version, including PDF and EPS. However, it cannot import Illustrator, PDF, or EPS files, and it lacks Photoshop 5.5's ability to preview and optimize Web graphics.

Macworld's Buying Advice Adobe Photoshop 5.0 LE lacks the full feature set of its high-end sibling, but it still provides robust image-editing features in an affordable and easy-to-use package. If you feel handcuffed by PhotoDeluxe but daunted by the full Photoshop 5.5, give Photoshop LE a close look.—ANDREW SHALAT

RATING: **** PROS: Same basic tools as full version; affordable. CONS: No CMYK support; cannot import EPS or PDF files. COMPANY: Adobe Systems (800/833-6687, www.adobe.com). COMPANY'S ESTIMATED PRICE: \$99.





Macworld's QUICK & EASY Reader Service

Introducing Get Info. Now you can get information on all the products and services you see in *Macworld*. Only get it faster. Simpler. Better. Now. All you have to do is visit one Web site:

www.macworld.com/getinfo

It's quick. Convenient. Fast. So next time you're interested in product, don't get a stamp. Get Info.

ಹ



HomeFree Phoneline USB

EASY NETWORKING ON THE HOME FRONT

or G4 includes built-in Ethernet, but that won't do you much good if you don't have a 10BaseT network. HomeFree Phoneline USB allows you to network USB-equipped Macs and PCs—and share Internet connections—using ordinary telephone cabling. Although you may pay more for the privilege of hidden wiring and plug-and-play connectivity, you avoid the hassle of creating an Ethernet network.

The HomeFree consists of a device



with one USB jack and two RJ-11 jacks on the back, along with software that allows several networked computers to share files or a single Internet account. Internet-gateway software and a limited version of Miramar Systems' PC MacLAN enable Apple Talk file sharing among PCs and Macs. If all this sounds familiar, it's because the HomeFree duplicates the features of Farallon's \$139 HomeLine Starter Kit (see *Reviews*, October 1999), right down to the identical bundled software. Where the HomeLine supports PCI Macs and PCs, however, the HomeFree is exclusively USB.

To get started, just connect a separate HomeFree device to the USB input of each computer you want to network and to your wall jacks, all of which must be wired to the same telephone line. You can use the spare RJ-11 jack to connect a phone (you'll be able to use the phone and the HomeFree network simultaneously). You can then share files as you would over any AppleTalk network. You can also add a PC to the mix.

To add Internet-sharing capability, you must choose a Mac or Windows 98 PC to act as an Internet gateway. Once you've

installed the gateway software on that machine, you can connect to the Internet by launching a browser from any computer on the network. The gateway software detects the request, connects to the Internet, and delivers the requested page.

The HomeFree comes with a booklet-size manual, a poster-size Getting Started guide, and lots of PDF files documenting the bundled software. Although the booklet devotes one chapter entirely to Macintosh setup and the poster contains separate sections describing Mac and Windows setup, the Mac installation process is not well explained.

The HomeFree offers two major advantages for home users: you can use the existing phone wires already hidden within your walls, and it includes software for sharing files and printers with a networked PC. But for about the price of one HomeFree, you could buy an Ethernet hub, network your 10BaseT computers, and save the cost of buying adapters for each computer (although you'd need some file-sharing software to add PCs and you'd most likely still have to pay for Internet access by the computer).

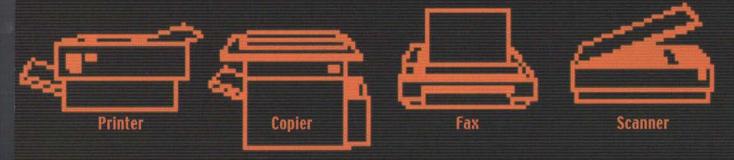
Macworld's Buying Advice

For those who need to network more than three computers that are reasonably close together, Ethernet is less expensive and easier to work with than a Home-Free Phoneline USB network. But if you have only a few computers (especially ones that are widely dispersed) or if you want to share files or Internet access between a Mac and a PC, the HomeFree is worth the cost. And the per-user price of the HomeFree is comparable to that of Farallon's HomeLine Starter Kit, which includes two PCI adapters. You can even mix and match the two on a single network if you want to add a non-USB computer.—SHELLY BRISBIN

RATING: \$\$\$\\^2\$\rightarrow\^2\$\righ

www.macworld.com/getinfo

Space Invaded?



PowerPrint 5.0 makes All-in-Ones Mac compatible

All-in-One printer/fax/copier/scanner units are great for places where space is at a premium. PowerPrint 5.0 is your complete hardware and software solution to connect your Macintosh to over 1600 PC printers, including popular multifunction peripherals from Hewlett-Packard and Canon. Available for both serial and USB compatible Macs.

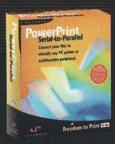
Includes **printing** and **scanning** software for these popular All-in-Ones and MFPs:

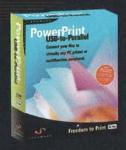
- HP OfficeJet R-40
- HP OfficeJet R-45
- HP OfficeJet R-60
- HP OfficeJet R-65
- HP OfficeJet R-80
- HP PSC-500
- Canon MultiPASS C5500
- Canon MultiPASS C3500
- Canon MultiPASS C635

To get PowerPrint, visit Comp USA, Fry's Electronics and other Macintosh retailers or contact Infowave directly at 888.842.5307 or www.infowave.com.

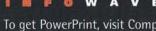
Save space. Get PowerPrint.







PowerPrint-your All-In-One solution.



To get PowerPrint, visit Comp USA, Fry's Electronics and other Macintosh retailers or contact Infowave directly at 888.842.5307 or www.infowave.com.















Without MacLinkPlus® Deluxe, you'll never know.



Is it a critical spreadsheet file? Is it a photo of your cousins at the Grand Canyon? Who knows? Certainly not you...because you can double-click it 'til your finger falls off, but it just won't open. Why? Maybe it originated on a Windows® machine, or was compressed, or was created with a program you don't own. Whatever

the case, you need MacLinkPlus Deluxe 11. Over 10 million users already rely on it to open, decompress, and convert documents. So when a file arrives on your Mac, you double-click it, it opens. End of story.



MacLinkPlus Deluxe is one of several Mac, PC and Palm Organizer programs from DataViz, the compatibility experts. Buy or upgrade at our Web site, or at many software retailers, including:





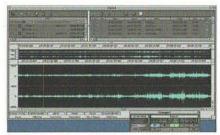


Reviews

Spark

AUDIO EDITOR OFFERS MORE-AND LESS

NEW PLAYER HAS ENTERED the professional two-track digitalaudio-editing arena: Spark 1.01, from TC Works. Unlike its competitor Berkeley Integrated Audio Software's Peak, Spark is intended to be a complete audio-mastering solution rather than a powerful, general-purpose audio editor. Lending credence to this claim are many of Spark's features: an expansive effects matrix that supports the industrystandard Virtual Studio Technology (VST) effects plug-ins, direct export of playlists to Adaptec's Jam and Toast CD-R-writing applications, and support for third-party audio cards. But as impressive as these features are, Spark could learn a thing or two from Peak.



Seeing Spark Spark's intuitive interface makes it easy to edit audio regions and add them to playlists.

Spark's interface is a model of efficiency. From within the program's Browser View window, you manage audio files and playlists and edit waveforms. The Transport window contains controls for playing, pausing, and recording audio files, as well as the Jog Shuttle wheel, which controls audio scrubbing, time stretching, and variable playback speed. To add new audio files to Spark, you either click on the Add button and select a new file from the resulting dialog box or drag and drop files into the Files portion of the Browser View window. Adding an audio region to a playlist is as simple as dragging the region from the File View section to the Playlist View section. From there you can change the volume and impose crossfades between regions. With a click on the Create CD button, regions are saved and opened in Jam or Toast (the latter is bundled with Spark).

The Master window is your gateway to Spark's impressive signal-processing capabilities. In this window, you can route audio through up to five VST-compatible plug-in effects in a series, one after the other. At the same time, you can run four of these serial streams in parallel. Running 15 or 20 effects will overwhelm even the most powerful G4; thankfully, the Master window also displays a gauge that indicates how much CPU power your current effects configuration demands. Spark includes some suitable VST effects, including a collection of EQs, filters, and a reasonable reverb. Effects unlikely to be used on a master recording—chorus and flange, for example—aren't included.

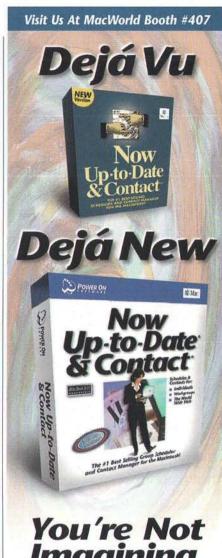
Like all of today's other professional digital-audio/MIDI-sequencer applications, Spark supports Steinberg's ASIO and Digidesign's Direct I/O protocols, allowing you to use high-quality audio cards from such companies as Digidesign, MOTU, Korg, and Emagic. Spark also lets you swap audio data between your Mac and a sampler through MIDI and SCSI.

Although Spark handles mastering well, sampler users who depend on their audio editor to make seamless loops may prefer Peak. Unlike Peak, Spark has no function for automatically locating desirable loop points. Those who have become accustomed to Peak's unlimited-undo feature will likewise be disappointed with Spark's inability to undo more than the last command. And although Spark lets you create crossfades, the program lacks an easy way to preview them. Finally, TC Works' copy-protection measures are unlikely to please anyone. We waited more than a week for a response code that allowed us to use Spark on a floppydrive-less Power Mac G3.

Macworld's Buying Advice

Spark 1.01 is a capable audio editor that is particularly useful for its intended purpose, audio mastering. With a high-quality sound card, a fast Mac, and a solid collection of premium VST plug-ins, you can turn out impressive results with this software. But Spark won't be at its peak until it duplicates the best of Peak's functions: loop location, unlimited undo, and crossfade preview.—CHRISTOPHER BREEN

RATING: ****/2 PROS: Clean interface; powerful effects processing. CONS: Copy protection; lacks automatic loop-point selection; no crossfade preview. COMPANY: TC Works (805/373-1828, www.tcworks.de). LIST PRICE: \$499.



You're Not Imagining Things...

No, it's not a dream either. The best-selling calendar and contact manager for the Mac is back. And baby, it's better than ever. Let me whisper those words you long to hear: "Mac OS 9 Compatible" and "Y2K Compliant." Go ahead, pinch yourself. It's not often you get to see an old friend. Drop by our place and catch up on things or try on an upgrade. Maybe you'll see some other old friends you've been missing.



Phone: 800-344-9160 or 612-317-0344 email: sales@poweronsoftware.com http://www.poweronsoftware.com

Circle 118 on card or www.macworld.com/getinfo

Mac Connect.



Introducing the Color Connection from Hewlett-Packard! Our newest industry leading "Mac Connect" solutions allow you to easily connect a variety of HP color printers to USB-ready Macintosh computers, including the new iMac — in the blink of an eye!

HP has long been the leading provider of Macintosh peripherals connecting more printers to Macintosh than any other company. The new lineup includes the HP DeskJet 800 and 900 Series models. Hewlett-Packard's PhotoREt color layering technology delivers the optimum combination of print quality, print speed, and great image quality on a wide range of media. You'll also experience the benefits of HP's unparalleled level of quality service and support.

So don't delay, we're "Mac Ready", so you can get "Mac Connected" today! For more information about HP's "Mac Connect" products visit www.hp.com/go/mac-connect Have fun choosing
"Mac Matching" printer lids
from a variety of "flavors"!*





Internet-Sharing Software

INTERNET GATEWAY, IPNETROUTER IMPROVE HIGH-SPEED INTERNET SHARING

IGH-SPEED INTERNET CONnections, such as cable-modem and DSL lines, are becoming commonplace both at home and in small businesses. Unlike modems, which top out at 56 Kbps, these newer connection options run at multiple megabits per second. That's far more bandwidth than one user needs on a continuous basis, making such connections perfect for sharing among several users. Vicomsoft's Internet Gateway 6.5 and Sustainable Softworks' IPNetRouter 1.4.2 allow sharing with no additional

COMSOFT Internet Gateway

Control Freak Vicomsoft Internet Gateway 6.5's remote console lets you control multiple gateways from anywhere in the world.

hardware. IPNetRouter does it on the cheap, whereas Internet Gateway offers access controls many small businesses need for managing their networks.

Each product can share dial-up connections (via modem or ISDN) or dedicated connections such as DSL. Both offer network-address translation, dynamic IP-address assignment via DHCP, multihomed Web serving, IP filtering, firewall protection, and dial-ondemand for nondedicated connections. You'll find both products easy to set up and configure, although Internet Gateway's comprehensive user manual is vastly superior to IPNetRouter's primitive read-me files.

Internet Gateway goes far beyond these basic features, but you pay for its capabilities on a per-user basis. Sustainable Softworks charges one low price for an unlimited number of users, but Internet Gateway offers features that work well for medium to large user populations: Web caching, a TCP-server locator, remote administration, and dynamic

DNS. Internet Gateway's access-list feature lets you control who does what on the Internet, and CyberNot filtering prevents surfing to inappropriate sites. Telecommuters can dial in at the same time the gateway is routing traffic to the Internet; this capability lets you act as a private ISP for your employees.

IPNetRouter isn't without its advantages, however. It passes Microsoft's Point to Point Tunneling Protocol transparently, making virtual private networking practical; supports MacIP—TCP/IP encapsulated in AppleTalk-so that non-Ethernet Macs can share Internet access: and can operate as an invisible background application. Internet Gateway has none of these features.

In our tests, both products worked well, once installed and configured. Internet Gateway's superior documentation eases administration chores, and its user interface is generally easier to understand.

Macworld's Buying Advice

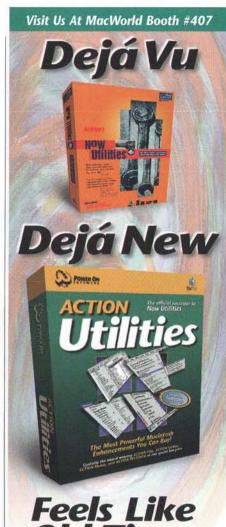
If you're lucky enough to have fat Internet pipes and are looking for a way to spread the wealth, one of these products is for you. Internet Gateway 6.5 works well in business environments that can afford to spend around \$50 per networked user, whereas anyone on a stricter budget will welcome IPNetRouter 1.4.2's economical price.-MEL BECKMAN

Internet Gateway 6.5

RATING: *** PROS: Excellent documentation; network-address translation and DHCP; content filtering; remote administration; dial-in access. CONS: Per-user pricing. COMPANY: Vicomsoft (800/818-4266, www.vicomsoft.com). LIST PRICE: Five users, \$249; ten users, \$430; unlimited users, \$730.

IPNetRouter 1.4.2

RATING: \$\$\$ PROS: Inexpensive; networkaddress translation and DHCP. CONS: No dial-in access; limited administrative features; no telephone tech support. COMPANY: Sustainable Softworks (support@sustworks.com, www sustworks.com). LIST PRICE: \$89.



Your old friends have gotten more than a facelift-they're completely rewritten and Mac OS 9 compatible. Each one is great separately, but together they're terrific (and an incredible value)! ACTION Files helps you organize files and folders automatically. ACTION Menus lets you arrange, create, and control your menus with ease. ACTION GoMac, The Macintosh Taskbar™, will amaze you. And ACTION WYSIWYG shows your fonts and typefaces right in your menus. Makes you all tingly just to think about it, doesn't it? Stop in and try them out-no strings attached. Hey, that's what friends are for.



Phone: 800-344-9160 or 612-317-0344 email: sales@poweronsoftware.com http://www.poweronsoftware.com

Circle 118 on card or www.macworld.com/getinfo

Reviews

SprintScan 4000

FILM SCANNER'S SOFTWARE BEEFS UP

HEN WE FIRST LOOKED AT Polaroid's SprintScan 4000, we concluded that it was a decent piece of hardware hampered by nearly unusable software (see "Slide Scanners Show Off," September 1999). We're happy to report that the updated Pola-Color Insight, although still imperfect, makes the SprintScan 4000 a serious contender among midrange 35mm film scanners.

PolaColor Insight 3.5's predecessor, version 3.0, had several problems. Unlike other scanning packages, it didn't process data from the scanner in real time; instead, it scanned the raw image to a scratch file and then applied any corrections made in the prescan, resulting in very slow scanning. Color-management features were sorely lacking, and you couldn't get scans into an Adobe Photoshop working space without doing many image-degrading conversions on a 24-bit file.

Although the SprintScan still scans to a scratch file, Insight 3.5 adjusts the image while writing to that file. As a result, the process is a great deal faster: on a 400MHz Power Macintosh G3 with Fast SCSI-2, scanning a full-frame, 4,000-dpi,



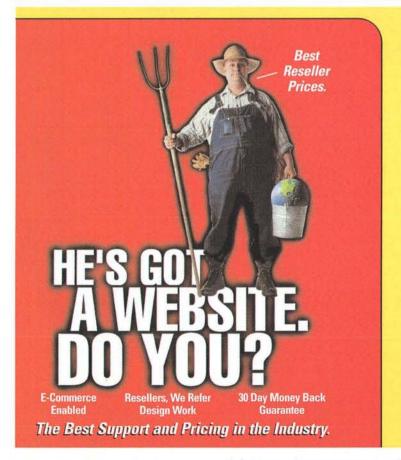
36-bit image took slightly over two minutes.

The color-management improvements are less obvious. You can now capture raw 36-bit scanner data and open it in Photoshop, but Insight still takes a passive-aggressive approach to ColorSync color matching. It ships with input profiles for various film types and lets you load a monitor profile, but it uses its own profiles folder rather than the ColorSync profiles folder; you need to copy your monitor's profile to Insight's folder. Also, Insight still can't scan to a Photoshop working space while displaying the image correctly on the monitor. Instead, Polaroid recommends scanning to monitor RGB, embedding the monitor profile, and then converting the file to Photoshop's working space when you open it in the image editor, meaning that you lose some information.

Although PolaColor Insight still needs improvement, version 3.5 is a step in the right direction. We were able to get excellent scans by opening a raw, high-bit file in Photoshop and converting it to the Photoshop working space, and we got pretty good scans when we used Polaroid's recommended workflow. The dynamic range of 3.4 seems conservative—starting with high-contrast slides, we obtained results with shadow detail comparable to that in scans from scanners with a quoted dynamic range of 3.6—and at 4,000 dpi, the scanner offers the highest resolution in its class.

Macworld's Buying Advice The SprintScan 4000 hardware is respectable, and although it still deserves better software to drive it, PolaColor Insight 3.5 is a huge improvement over its predecessor. If you don't mind jumping through a few hoops, you'll find that the SprintScan 4000 delivers impressive results. And Polaroid just dropped the price by \$500, making it a good value to boot.—BRUCE FRASER

RATING: **** PROS: Fast; good dynamic range; highest resolution in its class. CONS: Software could still use some work. COMPANY: Polaroid (800/432-5355, www.polaroid.com). LIST PRICE: \$1,995.



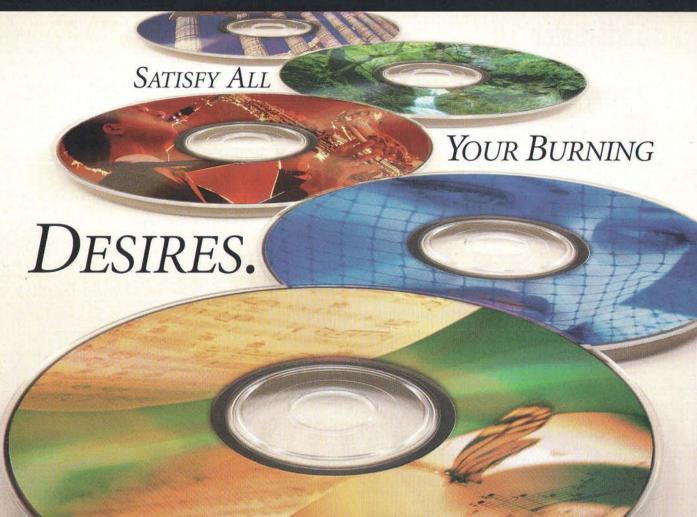
Yeeeehaaaaw! It's what you'll say when you sign up with or switch to Interland® web hosting. Prices from as little as \$19.95 a month. Dual DS-3 connections for extra speed. A whopping eighty megabytes of disc space. Guaranteed 99.9% uptime. 24x7 toll-free support for the wee hours. And pricing with absolutely no hidden charges. You'll be happy, we quarantee it!

Check out our website and discover why more and more people worldwide are trusting their websites to Interland. Whether you're a computer veteran or just getting started, you'll receive the best service, support and technology the industry has to offer. At a price that's right for you. Not to mention a great reseller program. Give us a call today, and let Interland bring you the world.

Pricing From \$19.95 per Month Call Today 1-800-599-0547 (404) 586-9999









91999 Adapte, Inc. All rights reserved. Adapter, the Adapter, tighter, Tagline, Toust, CD Spin Doctor, and Photoficlay are trademarks of Adapter, Inc., which may be registered in some their respective owners. Our software is designed to assest you in reproducing material in which you own the copyright or have permission to copy from the copyright owner. ** Manufacturer's suggest

Available at: CompUSA · Fry's Electronics Micro Center · J&R Computer World

Upgrade to new Toast™4 Deluxe and burn music, multimedia and data CDs. It opens a world of possibilities far beyond the software that came with your CD-Recorder. Now with new PhotoRelay™ software you can view, sort and organize your photos, illustrations, scanned images, movies, sounds, and fonts in customized media catalogs. New Toast 4 Deluxe, Only \$99*

You can also pull MP3 files from With \$20 Upgrade \$7
REBATE OFFER the Internet, as well as favorites from LPs and cassettes, to create your own

compilation CDs. New CD Spin Doctor™ software removes hisses, pops and clicks from old recordings—your music is reborn in stunning digital quality. Get new Toast 4 Deluxe and satisfy all your burning desires.

For details on the Toast 4 Deluxe Rebate Offer see your retail store or contact us at: http://cdr.adaptec.com/mwtoastcd or 1-800-442-7274 x7755.

Reviews

BarbaBatch 3.0

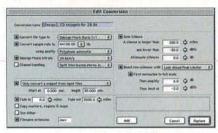
EFFECTIVE AUDIO CONVERSION

ROM OUTWARD APPEARANCES, the latest version of Audio Ease's professional audio-conversion utility, BarbaBatch 3.0, seems hardly different from the last version, and BarbaBatch continues to produce the finest-sounding conversions on the Mac. Converting audio files is still a simple four-step process-add files to the Input window, determine the formats you'd like your files converted to, select a destination folder for your processed files, and click on the Start button. Beneath the surface, however, version 3.0 sports some dynamic new features that are sure to appeal to those who use audio in their multimedia, sound-design, and Web work.

BarbaBatch's most obvious improvement is the number of file types it supports. In addition to supporting the same wealth of file types as version 2.5.2, BarbaBatch 3.0 can convert files to all the formats Quick-Time 4.0 supports, including the basic and professional editions of QDesign Music Encoder 2.0. BarbaBatch also supports RealNetworks' SureStream and Singlerate formats for the G2 player. If you're willing to spend \$99 for Fraunhofer's MP3 encoder,

you can also convert your audio files to MP3s. Regrettably, BarbaBatch can't convert any variety of MPEG or RealAudio file to another format. Another drawback: the program is still copy-protected.

Because the latest version of Barba-Batch is compatible with Apple's Navigation Services, you can now add multiple files to the Input window by clicking on the Add



Totally Batchin' BarbaBatch 3.0 offers conversion options that are quite extensive.

button and then, in the dialog box that appears, shift-clicking on the files you'd like to add. Of course, you can still easily add files and folders to the Input window by dragging and dropping them. BarbaBatch 3.0 also adds an AppleScript command for executing batch-processing requests.

Using BarbaBatch (with the Fraunhofer encoder) simply to encode MP3 files would be not only a waste of the program's exten-

sive conversion capabilities but also an indication of how poky it can be with certain types of files. Although BarbaBatch creates some of the best-sounding MP3s we've heard, it takes a long time to do so. On a 450MHz Power Mac G3, BarbaBatch took more than 20 minutes to rip a 33.3MB AIFF file at 128 Kbps (the highest quality). At the same settings, Xing's Audio Catalyst took just over a minute. Thankfully, this disparity isn't as broad with all file types. Importing an audio-CD track and compressing it with the QDesign Music Encoder, for example, took just 10 seconds longer with BarbaBatch than with QuickTime Player.

Macworld's Buying Advice If you're looking for the cleanest conversion of your audio files and an easy way to convert multiple files in one fell swoop, you'll find BarbaBatch 3.0 unmatched by any other Macintosh utility. The trade-off is longer processing times for certain file types—a compromise most audio professionals will gladly make.—CHRISTOPHER BREEN

RATING: **** PROS: Outstanding audio output; easy to use. CONS: Can't convert MP3 and RealAudio files; can be slow. COMPANY: Audio Ease; distributed by MacSourcery (800/622-7723, www.macsourcery.com). LIST PRICE: \$395.



1-800-52-FOCUS

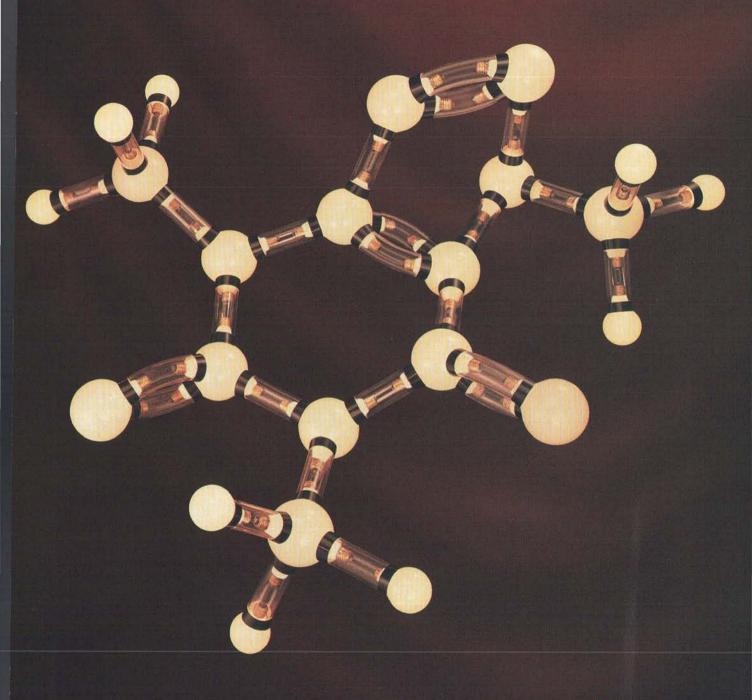
(949) 451-1460. www.meade.com

1-800-2-WONDER



www.lacie.com/mwfw.htm FireWire Hard DriveTM and the LaCie logo are trademorks of LaCie, Ltd. (2099 LaCie, Ltd. All rights reserved FireWire and the FireWire logo are trademorks of Apple Computer, Inc., registered in the U.S. and other countries.

The caffeine molecule. It, instead of atoms, it were made of light bulbs.



CONNECTED.

Get faster access to your ideas with the LaCie FireWire Hard Drive.™ It can send data along its FireWire™ connector at 400Mbps while linked to up to 63 FireWire enabled peripherals. And it's still hotswappable. Plus, it's available up to 36GB. All of your peripherals working together as one. Now who'd have thought of that?



LACIE

Made for ideas.

Reviews

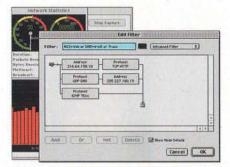
EtherPeek 4.0

NETWORK ANALYZER GETS SELECTIVE

ACK IN THE DAYS OF 10-MBPS Ethernet, you debugged network problems by sipping traffic from your network, using a trusty network analyzer, and then retiring to a quiet corner to digest the accumulated data. But tapping into today's networks, with their 100-Mbps Ethernet cards and gigabit backbones, is like drinking from a fire hose; a network spews too much data in just a few seconds to allow human manipulation. AG Group's EtherPeek 4.0 lets you selectively capture just the packets related to a particular problem. Other enhancements and new features help EtherPeek retain its position as a big fish in a sea of network tools.

EtherPeek works by taking over an Ethernet card in your Mac and using it to capture packets, decode them, and display them for your perusal. The program comes with an array of plug-in modules that perform some analysis chores for you, including logging HTTP requests, detecting hacker attacks, and decoding mail and Telnet sessions. EtherPeek can also pipe output to a Web server for remote viewing.

Version 4.0 overhauls EtherPeek's user



Picky Peeker EtherPeek 4.0's new tool for selective packet filtering lets you create filters using AND, OR, and NOT logical constructions.

interface, giving you the ability to sort traffic by various attributes and open multiple capture windows. You can also display various analytical views of the traffic, such as packet-size distribution, throughput history, and statistics for individual conversations and logical nodes. A new Global Statistics graph monitors the overall network usage and data rate in packets per second.

All these features help you distill the essence of captured data more quickly, but one of the most time-consuming analysis chores-even when automated by EtherPeek -has been matching numeric addresses with symbolic names. This version speeds name resolution by using DNS-resolution requests captured from the network to populate EtherPeek's internal name tables.

The most powerful new feature, though, is a new selective-filtering capability that lets you choose which packets are captured based on AND, OR, and NOT logic rather than a simple selection mask. This selectivity is essential for capturing data from busy backbone data streams.

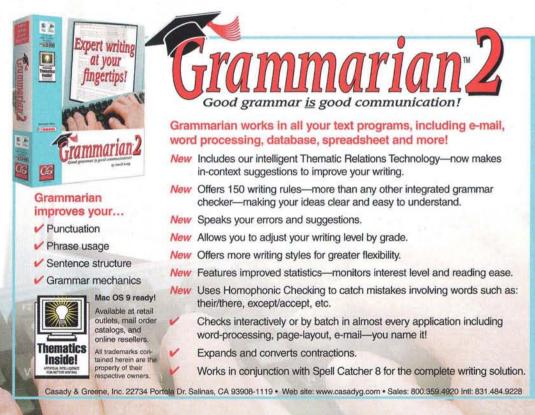
AG Group decided to cut anchor on 680X0 machines with this release, supporting only PowerPC processors, the most recent Ethernet cards, and Mac OS 8.0 or later. However, the package includes a backward-compatible capture tool that lets you capture traffic on previously supported platforms for postmortem analysis.

Macworld's Buying Advice Ether-Peek remains the king of network analyzers, on both the Mac and the PC. The latest wave of improvements in version 4.0 helps the product keep up with the ever rising tide of network traffic.-MEL BECKMAN

RATING: \$8888 PROS: Selective filtering mechanisms; network performance meters; HTML output; comprehensive protocol support; sophisticated plug-in analyzers; fast name resolution. CONS: None. COMPANY: AG Group (800/466-2447, www.aggroup.com). LIST PRICE: \$995.

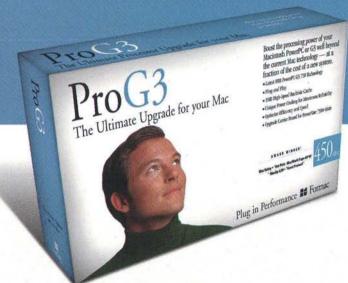
Also from

Casady & Greene:





Think Faster!



Now you can even upgrade older PowerMacs to the latest G3 technology. And it's easy! Award Winning

BEST BUY!
"Good Performace,
Excellent Price"
MacUser 8/99

BEST BUY!
"Great Products"
MacUP 6/99

OUTSTANDING!
"Best of Show"
MacWorld Expo NY99

IT'S HOT!
"Hot Pick!"
MacToday 11/99

The ultimate processor upgrade for your Mac will make you incredibly faster.

Now you can upgrade your Mac and get the performance of the latest G3 technology, for a fraction of the cost of a new system. The ProG3 includes 1MB back side cache and is available at three speeds and two versions: The first is designed for Blue & Whites and G3's and it plugs right into the Zif socket; the other includes an upgrade board that plugs into the processor card slot of older PowerMacs. It's incredibly easy! So, why wait?

Get your Mac to think faster right away, just visit www.formac.com and learn how easy it can be.



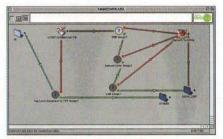
Formac Electronic Inc. 5673 West Las Positas Blvd., Suite 213 Pleasanton, CA 94588 Tel. 925 251 0100

MarkzScout

GRAPHICS WORKFLOW TOOL

ORKFLOW MANAGEMENT IS the current rage in graphics software, as developers look to automate various aspects of print and Web production. MarkzScout 1.0 takes a unique approach to workflow automation by providing customizable tools for inspecting, sorting, and processing graphics files. If you deal with large volumes of files and are willing to spend some time learning the program's intricacies, MarkzScout could be the ticket to greater productivity.

MarkzScout consists of small programs called Checkpoints and Actionpoints that can look inside PostScript, PDF, and HTML files, as well as native files created in most popular graphics programs. A Checkpoint inspects a file for a certain attribute, such as embedded JPEG images, then returns a yes or no depending on whether that attribute is present. An Actionpoint performs an action on the file, such as generating a list of spot colors. You can also use Actionpoints to launch an application, run a Photoshop Action, or perform preflight operations with Markzware's separate FlightCheck software.



Graphics Pipeline MarkzScout lets you sort and inspect files by linking Checkpoints and Actionpoints in a customized layout.

By linking Checkpoints and Actionpoints within a MarkzScout layout, you can easily sort files and generate useful information about their contents. Creating a layout is easy: you add Checkpoints and Actionpoints, then drag a connector to link them. It's also easy to create basic Checkpoints and Actionpoints, but for complex points you'll need to master MarkzScout's built-in scripting language. For example, you would have to write a MarkzScout script if you wanted to determine whether to set a QuarkXPress document for color or gray-scale printing.

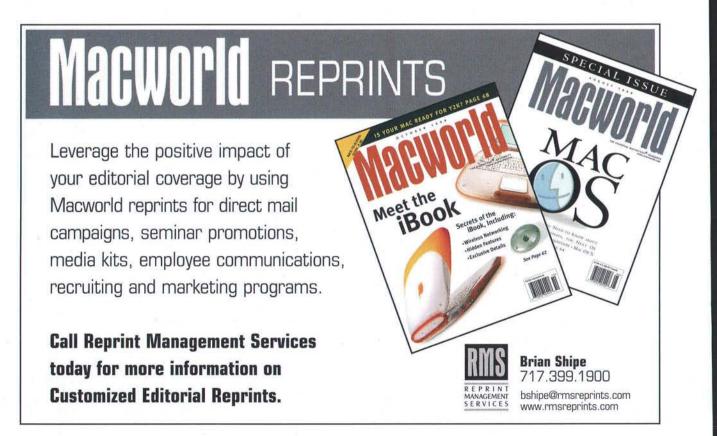
MarkzScout scripts can include the full range of programming expressions such as variables, arrays, and conditional branches. The commands allow nearly complete

access to a document's contents, including information about type styles, colors, and print settings. However, aside from its support for Photoshop Actions, MarkzScout provides very limited built-in features for modifying a file.

The MarkzScout reference guide lists every scripting command, but the skimpy descriptions offer no examples of how to use the commands in a script. The program also lacks support for AppleScript, which would make MarkzScout more valuable by letting you automate QuarkXPress operations in addition to Photoshop Actions.

Macworld's Buying Advice Markz-Scout 1.0 is a useful tool for managing native graphics files. The program would be more valuable if it included better documentation and supported AppleScript. Even in its present form, it gives you a relatively painless way to create file-inspection workflows customized to the way you do business .- STEPHEN BEALE

RATING: \$\$\$1/2 PROS: Customizable features for inspecting and sorting files; works with native file formats. CONS: Poor documentation; no AppleScript support. COMPANY: Markzware (949/756-5100, www.markzware.com). COM-PANY'S ESTIMATED PRICE: \$799



Think Better!



NEW!!!

"A great gift for the Holiday Season!" Enjoy true 3D with our new wireless and super light ProCyber 3D glasses.



The fastest graphics accelerator for your Mac just got better.

ProFormance 3 performed nearly twice as fast as its nearest competitor in tests run by major magazines worldwide. But that's only one of the many reasons why it has become the first choice for Web, graphics, and multimedia professionals. The long list includes: OpenGL compatibility; true 3D with the

ProCyber 3D virtual reality glasses; better digital output connectivity - with your choice of VESA or SGI Flat Panel Display standards, or SVideo Out. And much more! So why wait? Find out how to get your Mac to think better, just visit www.formac.com and learn how easy it can be.

Award Winning Performance

IT'S A WINNER!

Photoshop acceleration was especially impressive." MacWorld 11/99

AMAZING!

"Delivers Killer Performance!" MacAddict 11/99

BEST VALUE!

"Best Value Graphics Card on the Market." MacUser 8/99

IT'S THE FASTEST!

"Fastest Photoshop Performance!" XLR8YOURMAC 10/99





Formac Electronic Inc. 5673 West Las Positas Blvd., Suite 213 Pleasanton, CA 94588 Tel. 925 251 0100

Reviews

SimCity 3000

CLEANER CITIES, NO URBAN RENEWAL

AC USERS REMEMBER FEW games more fondly than Maxis's original city simulator, SimCity. This delightful toy allowed those with delusions of grandeur to design, build, and run their own metropolises. SimCity 3000, the latest spawn of the original, comes to the Mac bearing improved graphics, waste-management responsibilities, intercourse between neighboring cities, and a Windows-like interface.

SimCity veterans will feel completely at home with the new version. All the usual elements are available: a Landscape button, for changing the countryside's elevation; a Zone button, for creating light, medium, and dense residential, commercial, and industrial zones; a Build Transportation button, for laying down roads and rail; a Build Utilities button, for adding power and water; and buttons for placing civic buildings (schools, police stations, and hospitals, for example). You can also call upon advisors who offer their two bits on various issues that affect your city.

As in any other version of SimCity, your job is to lay down zones, transportation,



Sim-ply Beautiful SimCity 3000's spiffy new graphics add to the original's charm.

power, and water in such a way that people will want to inhabit your burg. To keep them there, you must maintain a reasonable tax rate; provide adequate police, fire, health, and educational services; and avoid choking the town with traffic and pollution. Your rewards for sustaining a prosperous city come in the form of special structures—a mayoral mansion or a statue, for example. SimCity 3000 also includes landmark buildings you can add to your city. These landmarks, like everything else in the game, are beautifully rendered.

The biggest changes in SimCity 3000 are the waste-management responsibilities and the relationships with neighboring cities. Every city generates trash, and your

SimCity is no different. You must deal with the trash created, or your city becomes smothered with garbage and the population flees. Your neighbors may offer to take your garbage—for a fee, of course—if you haven't zoned enough space for it. If you have loads of dumping ground, other cities can pay you to take their trash. Neighboring towns offer power and water deals as well.

Although these new elements enhance an already enchanting simulation, some users may be disappointed that SimCity 3000 adds few other new features. In many ways, SimCity 3000 is little more than SimCity 2000 with a very successful face-lift. And Mac users accustomed to a Mac interface will likewise be disappointed with SimCity 3000's Windows look—complete with a chunky, white arrow cursor and Windowsstyle folder navigation.

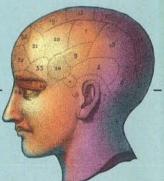
Macworld's Buying Advice Those new to SimCity will delight in the latest version. If you're content with SimCity 2000 and can live without a prettier version, wait for SimCity 4000.—CHRISTOPHER BREEN

RATING: **** PROS: Beautifully rendered; usual SimCity charm. CONS: Windows-like interface. COMPANY: Electronic Arts (800/245-4525, www.simcity.com). LIST PRICE: \$50.









Introducing ColorMatch... Software

GET CONSISTENT COLOR FROM
YOUR MIND'S EYE TO
YOUR DESKTOP PRINTER WITH
COLORMATCH FOR IMAC.*

Sure, you know the colors you want. It's just getting all your equipment to see eye to eye. Now, Radius' ColorMatch for iMac takes all the guesswork out of matching colors by eye. In a single click, ColorMatch analyzes your system

®miro displays, inc. All rights reserved. Radius and ColorMatch are trademarks of

Fly

FUN FLIGHT SIM PUSHES HARDWARE

AC FLIGHT ENTHUSIASTS finally have an affordable general-aviation (GA) simulator to call their own, thanks to Fly 1.0, from Terminal Reality and Gathering of Developers. And, mostly, Fly succeeds remarkably well for a first effort. Its realism and beautifully rendered skies make for fun flights, although harsh hardware requirements and bugs result in some turbulence.

All the critical elements of generalaviation flight are in Fly, from planning to en route air-traffic control to touchdown. The Flight Planner lets you select departure and arrival airports from more than 9,000 facilities worldwide; add or delete way points; and load fuel, passengers, and baggage.

You have five aircraft at your disposal, including the venerable Cessna 172 and the Hawker 800XP business-class jet. Fly's 3-D cockpits incorporate almost all the working controls found in a real aircraft. Thankfully, Fly provides keyboard shortcuts for many controls, so you don't always have to reach for the mouse.

Although you can fly all over the world, detailed scenery is provided only for Los



Sunset Beach Fly beautifully renders a sunset over Los Angeles.

Angeles, San Francisco, Chicago, Dallas-Fort Worth, and New York. In other areas, some major landmarks, including the Grand Canyon, are barely recognizable. Even within the five detailed areas, ground features—apart from airports and scattered buildings—tend to look blurry below a few thousand feet.

Fortunately, Fly's sky effects, which include 3-D clouds, haze, lens flare, and precipitation, are stunning enough to make you overlook the terrain. And you can fly through real-world weather conditions by importing weather data from the National Oceanic and Atmospheric Administration's Web site (http://weather.noaa.gov/weather/metar.shtml).

As you might expect, all this realism demands a lot of computing horsepower. A complete Fly installation gobbles up 1.6GB, and the application requires a *minimum* of 70MB of RAM. On a blue Power Mac G3/400 with a stock ATI Rage 128 video card, frame rates usually hovered in the high teens or twenties. Users with slower CPUs and older video cards report performance ranging from abysmal to acceptable.

Fly's initial release is also marred by bugs, which run the gamut from annoying to serious; patches should be available by the time you read this. Fly's extensible architecture provides encouragement for the future. The flight-sim community has already begun to produce promising add-ons.

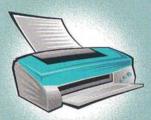
Macworld's Buying Advice Despite its problems, Fly is a blast. And with no other comparably priced GA flight sim on the horizon, it's the only game in town. If you're looking for a kick-in-the-pants flying experience—and you have the hardware to handle it—give Fly a spin.—FRANKLIN TESSLER

RATING: *****/2 PROS: Detailed, working cockpits; stunning sky effects; extensible. CONS: Bugs; demanding hardware requirements; limited scenery. COMPANY: Gathering of Developers (877/463-4263, www.iflytri.com). LIST PRICE: \$50.













THAT LETS YOU PRINT WHAT YOU SEE.

and automatically adjusts your iMac so that what you see on the screen is what prints out on your printer. Perfect for Internet shopping and digital photography – wherever accurate, consistent color is important. ColorMatch

comes with a color calibrator in your choice of five iMac colors. So get color coordinated today. Visit www.radiusdisplays.com and find out where to get your ColorMatch for iMac.





The Next Generation of the Greatest Strategy Game Series of All Time

CALL TO POWER ADVANCEMENTS

All-new strategies, including unconventional warfare . More units, buildings, Wonders and technologies . Vast new realms: Space and Sea

Fully-animating, hi-res, 16-bit graphics Breakthrough time-saving interface Enhanced diplomatic and trade options

Internet and LAN Multiplayer · All-new Wonders of the World in stunning cinematics

AVAILABLE NOW!





ACTIVISION

www.activision.com



MacSoft® A GT Interactive Software Company www.wizardworks.com/macsoft/

Circle 29 on card or www.macworld.com/getinfo

The Game Room

It's a Wrap

THE TOP 10 MAC GAMING THINGIES OF THE PAST 1,000 YEARS

by Christopher Breen

ttempting to set a proper example, I've taken no special precautions for the flip of the millennial odometer -no crates of Costco goods shoved into the crawl space beneath my dwelling, no stacks of cash sewn into my mattress, and no extra trips to my Chosen Place of Worship in case it turns out that the All Knowing operates on the Gregorian (rather than the Julian, Mayan, Chinese, or fiscal) calendar. I have made one concession to the year double-aught, however. In the tradition of journalists everywhere, I feel it's my duty to offer a summing up-not of the past year, but rather of the past thousand years.

Admittedly, the first 983 years of the passing millennium offered little in the way of Mac gaming. I prefer to think of those years as the Preparation Age—a period in which the fates conspired to create history interesting enough to form the basis of computer games. After all, without the Renaissance, the entire DaVinci's-studio puzzle would be missing from Presto Studios' Journeyman Project II. Where would Sid Meier and his many world-building sims be without Gettysburg and the Age of Exploration? And could id Software possibly exist without the excesses of the Spanish Inquisition?

So, without further ado, allow me to present this, my first and—unless those multivitamins I've been swallowing work remarkably well—last Top 10 Mac Gaming Thingies of the Millennium.

Infocom

I'd like to say that I was there at the very beginning—buying Finder coauthor Steve Capps's Alice (later included in a sumptuously packaged collection called Through the Looking Glass), the first Mac game and the only game ever sold under the Apple label. I wasn't. Like many early Mac gamers, I first played text adventures created by Infocom. Members of MIT's Dynamic Modeling Group launched Infocom in the late 1970s and created such marvelous interactive tales as the Zork series; Planetfall; and my personal favorite, Leather Goddesses of Phobos. There was absolutely nothing Mac-like about their interfaces, of course, but these games clearly



demonstrated that I could waste a colossal amount of time with my Mac and regret nary a second of it.

Déjà Vu: A Nightmare Come True

This detective adventure from Mindscape was one of the first games to effectively combine the best elements of interactive fiction with the graphical components of the Mac's unique user interface. To use the items found scattered throughout the game's environment, you clicked and

dragged them to an inventory window, where a simple double-click revealed their contents. This concept may sound hackneyed now, but at the time it was revolutionary—certainly something that was impossible on a PC.

Dark Castle

Speaking of impossible PC tricks, many have forgotten that for over a decade, the Mac's graphics absolutely crushed anything the PC could offer. And no game

> more clearly demonstrated this disparity than Silicon Beach's Dark Castle. Not only was this achingly addictive, leapabout-and-oh-dammit-there'sanother-rabid-rat-and-arrowflinging-robot arcade game beautiful, but it was also a kick to play. As a matter of fact, the game was so good that Delta Tao brought it back and colorized it a few years ago. Oldtimers and new gamers alike should head for Delta Tao's Web site (www.deltatao.com) to check it out.

Balance of Power

In an interview for a book I cowrote a couple of years ago, *The Macintosh Bible Guide to Games* (Peachpit Press, 1996), veteran game programmer Chris Crawford remarked, "*Macworld* magazine never ran a story on Balance of Power, even though it was a huge seller and very strong on the Mac." Better late than never. Mr. Crawford's Balance of Power demonstrated that the Mac's computational muscle and GUI could be used to create a compelling, thinking person's continues

game. Set in the Cold War era of the time, Balance of Power placed you in the hot seat of international diplomacy, letting you negotiate among nations in an effort to avoid the ultimate endgame—nuclear annihilation.

The Colony

Long before id Software's John Carmack ever dreamed of owning a family of Ferraris, a first-

person action-adventure game appeared for Mac—David Smith's The Colony. This wire-frame game placed you in an off-world laboratory taken over by menacing eyeball creatures. Sure, it may sound laughable, but back then in the era of hardware-accelerated 3-D action games

The Colony was scarily real. And unlike today's shooters, it required more than a deft trigger finger to complete.



New Mac gamers are likely to be confused by my inclusion of a company that's currently known for its highly regarded extensions manager and MP3 utility. But at one time Casady &

Greene produced the most "Mac-ish" games on the Mac. These games, written mostly by Patrick Buckland and john calhoun, celebrated the oddball spirit of the Mac by including hysterical sound effects, goofy graphics, and a slew of bizarre characters. Buckland's Crystal Quest and Sky Shadow and calhoun's paper-airplane puzzle game, Glider, were among the best games of their time. Another C&G game, Mission: Thunderbolt, a dungeon-exploration adventure, will always hold a special place in my heart.

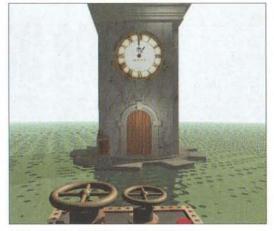
Myst

Pathways into Darkness

This first-person shooter

was ahead of its time.

The introduction of the CD-ROM was supposed to catapult gaming into the stratosphere. What we quickly learned was that although many of these disc-



Myst The first CD-ROM game to get it right.

based products were attractive, they were dreadful games. It took a Maconly CD-ROM title to show the rest of the gaming world the potential of these newfangled, silvery discs. That title was, of course, Cyan's Myst, a CD-ROM game that—quite simply—got it

right. The graphics were opulent, the music was properly atmospheric, the puzzles were challenging without being unfair, and the story line enticed. For many players, Myst became their world.

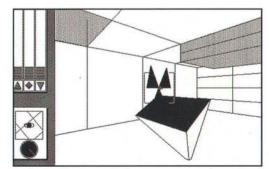
id Software

A company devoted to making PC games, id Software has had a huge influence on

every aspect of computer gaming—for the Mac as well. The company's first-person shooters, Wolfenstein 3-D and the Doom series, opened the bloodgates, and scores of game publishers have since joined in the grisly good times.

Bungie

id may have launched the craze for firstperson shooters, but many will argue that Bungie made these games better. Though



The Colony In its day, this adventure seemed terrifyingly real.

primitive by today's standards, Bungie's first shooter, Pathways into Darkness, offered lighting effects not found in other games of the time. And the Marathons combined spectacular action with engaging story lines—something id has never attempted. In these early titles, Bungie danced the "we've seen it and can do it better" two-step, taking a genre that had been tried—and found wanting—and polishing it to a fine gloss. With the Myths, Oni, and the upcoming Halo, Bungie is setting the pace—establishing awesomely high standards for other game publishers to follow.

The Internet

For much of its short history, computer gaming has been a solitary affair. The



Dark Castle Its graphics crushed anything the PC could offer.

explosion of the Internet has changed all that. In the past few years, thousands of computer gamers have banded together across the Web, mostly to blow the bejesus out of each other. Granted, shedding other gamers' virtual blood and dancing over their prostrate carcasses is fairly antisocial behavior, but with cooperative gaming coming to the fore and the introduction of gentler forms of multiplayer Internet play,

there's a very real possibility that computer gaming will finally bring people together rather than drive them apart.

And, honestly, is that such a bad way to start the next thousand years? **m**

Contributing Editor CHRISTOPHER BREEN cares not one whit whether the next millennium begins on the first day of 2000 or on the first day of 2001, so save your breath.

"I wanted the best protection available and APC delivered."

- Fred Lugano, weatherization.com, Vermont

8 million computer users can't be wrong about APC power protection

Personal computer users across the country recognize APC as a leader in power protection. Now, home users are finding multiple uses for APC products. Some use their APC to run a television or small refrigerator during a disaster. Others will use their APC Uninterruptible Power Supply (UPS) as a "power bridge" to give them enough time to get their power generators started. Still others will use APC to protect sophisticated audio and visual equipment from damaging electrical surges.

Business users enjoy the dependability of APC, the \$25,000 equipment protection guarantee that comes with all APC UPSs, and the Lifetime Guarantee[†] that comes with all APC surge protection products.

Visit your reseller or the listed retailers and try one today!



APC provides legendary surge protection for all your equipment needs.









APC Back-UPS Pro® 500:

"APC's latest plugs into a USB port, making it
completely painless to protect your PC from
power snafus and electrical spikes."

- PC Computing 4/99

An APC UPS gives you:

- Enough outlets to protect your computer plus displays, printers, scanners and more
- Emergency battery power for continuous uptime through brief power outages to help save your data
- Telephone/network surge suppression to maintain your online connection
- Auto-shutdown software which saves your files and data, even when you're away from your computer

APC safety and reliability benefits:

- User-replaceable batteries reduce service costs
- · Easy overload recovery
- · Site Wiring Fault indicator

- Audible and visible alarms alert you to power events as they occur
- \$25,000 equipment protection guarantee (U.S. and Canada only)
 †See policy for details
- "Best in Class" longest runtime guarantee (5-40 minutes)

You can find APC power protection products at these stores or visit http://promo.apcc.com and click on "how to buy" to find your nearest reseller.















Enter to win the APC Home Power Protection Package.

Enter to win APC's legendary power protection for your entire home, home office or small business, a \$3000 value! All entrants will also receive an "Are You at Risk" Kit. (See APC's Web site for complete promotion details)

Enter now: Visit http://promo.apcc.com Key Code o 932z • Call 888-289-APCC x8823 • Fax 401-788-2797

©1999 American Power Conversion. All Trademarks are the property of their owners. APC3E9CF-US • PowerFax: (800)347-FAXX • E-mail: apcinfo@apcc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA

If you buy it,

If you didn't know then, you will now. MacBuy.com is the first and only comprehensive buyer's guide from the editors of Macworld magazine. MacBuy.com gives you authoritative reviews of the most important Mac products available, and state-of-theart testing from Macworld Lab. With MacBuy.com, you'll know...

...which products to buy. And which to avoid.

Great deals on the Web. And where to find them.

How much it costs. And is it worth it.

As Easy as 1-2-3

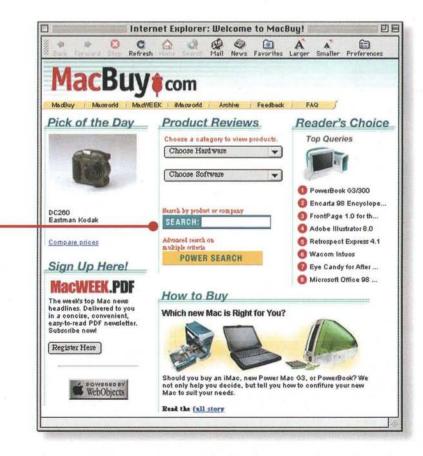
Whether you're searching for a product review or finding the Pick Of The Day, it's easy with MacBuy.com's clean user interface and intuitive navigation.

Powerful and Easy to Use

Our search engine allows you to search by product or vendor name; or use the Power Search button to search by multiple criteria, such as rating and price.

Support from Apple

Literally. Built with Apple's WebObjects, MacBuy.com is solid as...well, a rock.



will it work?



Reviews Galore!

The most important and current Mac products objectively reviewed for your purchasing pleasure.

The Best of the Best...

With mouse-rated and Lab tested products you know what to buy. And what to avoid.

Dependable

MacBuy.com doesn't use spiders. Prices are direct from the resellers, for faster download and reliability.

The Facts...

See the products, view our ratings, and read key features before you buy. All summarized in one easy-to-find location.

Convenience and Value!

The latest and lowest prices from leading Mac resellers. Plus, convenient links to their sites so you can purchase the product you want instantly!

From the publishers of Macworld magazine



Review, Compare, Price and Buy.



san francisco moscone convention center marriott hotel

MACWORLD EXPO/ SAN FRANCISCO: WHERE THE ULTIMATE IS POSSIBLE

You're a Mac user. You think outside the box. You see challenges, not limits. You're pushing the envelope of today's hot technologies.

MACWORLD EXPO/SAN FRANCISCO is your ultimate experience as a Mac user. The exhibit floor is packed with thousands of radical new software solutions, games and peripherals for your Macintosh. The conferences explore the frontiers of Mac computing while offering easy-to-implement solutions to today's challenges. And MACWORLD Expo is the only event where you can share ideas with nearly 70,000 other hip, forward-thinking Mac users.

Register by
December 3, 1999
for maximum
savings! Visit
www.macworldexpo.com
for complete show
information and to
register now!

THE WEST COAST'S BIGGEST SELECTION OF MAC TECHNOLOGY The

awesome success of the new generation Macs has inspired developers to turn their creativity loose on the Mac OS. What results! Come to MACWORLD Expo for a huge selection of products you simply won't be able to live without. Discover software tools that let you perform time-consuming tasks in simple new ways. Test-drive new technologies that let you explore the outer reaches of Mac performance. See how the latest FireWire™ devices and Universal Serial Bus (USB) peripherals expand the functionality of your Mac. And have some fun! Games are on the Mac like never before, from Mac versions of best-sellers to Mac-only titles.

Access www.macworldexpo.com for details on Special Interest Environments and complete list of Exhibitors at MACWORLD Expo/San Francisco 2000!

www.macworldexpo.com

PRE-CONFERENCE WORKSHOPS January 4, 2000

CONFERENCES AND EXHIBITS January 5-8, 2000

SAVE MONEY WHEN YOU BUY ON THE EXHIBIT FLOOR Looking to find the ultimate bargain for your Macintosh? When you shop at MACWORLD Expo you get so much more than you'd ever find in a computer store or catalog. It goes without saying, the selection is enormous and the products are cutting-edge. More importantly, you get a chance to talk directly to developers and vendors. Ask tough questions, put the products through their paces, then strike a great deal. You can make purchases right on the show floor—from the latest releases, to that application you meant to buy last year!



SPECIAL INTEREST ENVIRONMENTS TARGET THE PRODUCTS RIGHT FOR YOU

MACWORLD Expo offers so much for every Mac user, from Web Masters to school teachers, filmmakers to entrepreneurs. Check out the Special Interest Environments while you are exploring the exhibit floor to find and compare hot new products for your particular needs. Visit these hands-on demonstration areas to learn how to customize your Mac to meet the demands of your career and interests.

EXPAND YOUR KNOWLEDGE BASE AT THE CONFERENCES AND WORKSHOPS Learn from industry experts and luminaries who are shaping the future of Mac computing. The MACWORLD Expo conferences and workshops offer top-notch education for everyone who wants to do more with a Mac. If you're just starting out with your Mac, you'll find entry-level courses to increase your productivity and ease your frustrations. If you're a high-level user, MACWORLD Expo offers sessions to keep you current with the latest technological advances. These two highly acclaimed conferences and workshops are sure to educate, entertain and empower you and your Mac!

san francisco moscone convention center january 4-8, 2000

Visit www.macworldexpo.com for complete workshop and conference information and to Register Now!

Sponsored by:



MacWeek.com

MacBuy com







Have Fun, Win Prizes!

As you're strolling among the hundreds of product displays, try your hand at the Macintosh Gaming Championships' — there's more than \$25,000 of prizes to be won. Are you a starving artist? Get your work noticed by entering the Digital Art Competition. You could be the next big sensation everyone's looking for! Stop by the show floor to pick up your 2000/2001 entry form.

www.macworldexpo.com



The iMac

THREE NEW IMACS DELIVER MORE POWER

AND THE MAGIC OF DIGITAL VIDEO

ast year, Apple redefined the look-and-feel of the personal computer, transforming the utilitarian beige box into a curvy, colorful, translucent object that pushed the boundaries of what a computer could be. But with the release of the next generation of iMacs, Apple is trying to top its original success.

Since the first iMacs appeared on the scene, we've been wondering what the next step in iMac evolution might bring. The candy colors were a natural, but the computers inside those eye-catching cases didn't change much when Apple shifted from Bondi blue to strawberry. Nor was the gradual elevation of the iMac's G3 processor from 233MHz to 333MHz anything to write home about. Now we've seen the future of the iMac, and it comes in three parts: the \$999 iMac, the \$1,299 iMac DV, and the \$1,499 iMac DV Special Edition. Just as the original iMac heralded the growing importance of the Web, making it easier to use the Internet, the new DV models boldly announce what Apple feels is the next frontier in home computers: digital video.

BY FRITH BREITZER

Is Back



Lights! Camera! iMac!

THE MAC OWES MUCH OF ITS ORIGINAL POPULARITY TO DESKTOP PUBLISHING, the killer app that transformed the way we communicate in print. Now Apple is hoping to launch a similar revolution in desktop video with an easy-to-use video-editing program called iMovie.

iMovie, bundled with every iMac DV and iMac DV Special Edition, lets you assemble video clips into movies that you can post on a Web site, copy to VHS tapes, or even e-mail to friends. Using a simple drag-and-drop interface, the program lets you add titles, scrolling credits, sound effects, voice-overs, and transitions.

Apple sees iMovie as the ideal complement to digital camcorders, which can transfer digital video to the iMac DV via FireWire. You can even copy your finished movies back to the camera and, from there, a VCR.

Behind the Scenes

iMovie sports an interface similar to that found in QuickTime Player 4.0—a "shelf" that holds as many as 12 video scenes. To add clips, you use a FireWire cable to connect your iMac with a compatible digital camcorder, launch iMovie, click on iMovie's Import button, and then click on the Play button. iMovie places the first scene in an unoccupied slot on iMovie's shelf. iMovie detects scene changes—where you stopped or started filming—and creates a new scene at each break.

To create transitions such as fades and dissolves, you click on the Transitions button, select the type of transition you want to employ, determine the length of the transition, and place it between scenes in the timeline. Titles work much the same way. Type in the text of your title, choose a title style—Centered, Flying Letters, or Music Video, for example—and drag your title to the appropriate location on the timeline.

Cropping scenes is also easy. Just click below the Scrubber Bar, position the beginning and end crop markers, and choose Crop from the Edit menu to dispose of any unwanted footage.

You can export your work back to your camera through the FireWire cable or to QuickTime. When exporting to QuickTime you have access to all of QuickTime Pro's encoders, including the Sorenson Video and QDesign Music codecs.

iCan't Believe It's So Simple

iMovie is a study in simplicity. Granted, that simplicity may limit those with more adventurous ideas, but for those who merely want to piece together a video of their child's first birthday party or a family trip to Disneyland, there's no product on the market that allows you to take on these homespun projects with such ease.

—STEPHEN BEALE AND CHRISTOPHER BREEN



iDirect iMovie's interface resembles that of QuickTime 4.0.

iMac Undressed

The new iMacs, while similar in appearance to the older ones, are slightly shorter—Apple has taken an inch off the top of the previous models. These iMacs are also more transparent—now you can see the monitor tube inside. The steel casing that hid many of the components in the original iMac is gone; you can look right through these new systems.

Those who complained about the chintzy feel of the original iMac's CD-ROM drive will be happy to see that the CD and DVD drives on the new iMacs are slot-loading—you just push in a disc, and it's pulled the rest of the way into the drive, just like sticking a tape into your VCR.

Color Choices Now let's get to the really important stuff—the colors. The basic iMac is available only in blueberry. The iMac DV is offered in the original five colors, although this time the colors are lighter and the plastics clearer. The strawberry, for example, is more of a Barbie-esque pink.

But what might really turn some heads, and stop more-testosterone-driven users from complaining about "girly" computers, is the iMac DV Special Edition. It comes in a handsome gray (derived from the Power Mac G4's graphite color scheme). The chassis is barely tinted, almost completely transparent. You can see right down to the copper wiring.

Smart iMacs, Many Choices

As you'd expect, all three new iMac models offer faster processors and more memory than their predecessors (see the table, "The New iMacs"). But this time, in a change from Apple's previous one-size-fits-all philosophy, buyers can choose more than just the color they want. Now users can choose whether they want the extra features that are part of the iMac DV. And even after they've taken their new iMacs home with them, they'll find the systems much more open to change—you can add memory without cracking the case open like some technical pro.

Back to Basics For the mind-bending \$999 price of the basic blueberry iMac, you get a 350MHz G3 processor but no DVD-ROM drive, FireWire ports, video-editing software, or color choices. Still, it should prove an economical choice for users who care more about price than about digital-video features. Users now get 64MB of RAM, instead of the scanty 32MB in previous iMacs; much

more impressive graphics acceleration for gaming; a 6GB drive; and two USB ports on separate buses, rather than the bandwidth-sharing arrangement used by previous iMacs.

Video Star The iMac's most important features come only with the higherend models, the iMac DV and iMac DV Special Edition. The *DV* in their names doesn't just hint at the DVD-ROM drive in these models; it refers to what Steve Jobs calls the next big thing in personal computing: digital video.

The iMac DV makes video editing a reality right out of the box. Its two 400-Mbps FireWire ports are the same as those on the Power Mac G4, and its 400MHz G3 processor, 100MHz system bus, and 10GB hard drive ensure that there will be enough speed and space to keep everything moving.

Apple's hope is that the iMac DV will change the way people think about home movies. Both of the high-end models come with the company's new iMovie software (see the sidebar "Lights! Camera! iMac!"). You can easily import digital video into iMovie from a digital camcorder (via either of the iMac DV's two FireWire ports) and then create video montages; rearrange clips; and add titles, scrolling credits, special effects, sound-



Food for Thought The iMac's new rear door lets you install RAM quickly and without cracking open the case.

tracks, and sound effects. You can then save the videos on the hard drive and send them out to your friends and relatives over the Internet, or you can copy them to a VHS tape via your camcorder.

iMac Outreach

One of the major complaints about the original iMac was its lack of connectivity to external devices. It offered two USB ports, but that was about it. There was no high-speed means of connecting peripherals such as fast hard drives, no video-out port for attaching an external monitor or projector, and no easy way to add

RAM. All of those problems have been rectified with this new batch of iMacs.

Video to Go On the back of the iMac DV is a small plastic cutout that pops off to reveal a VGA video-out port. (Apple includes a separate cutout designed to fit around the port, so you can choose whether to have the port available at all times or hidden out of view.) Through this port, users can connect the iMac to an external monitor—but the external device will only mirror what's displayed on the built-in iMac screen; it won't display a second workspace side by side with the iMac's.



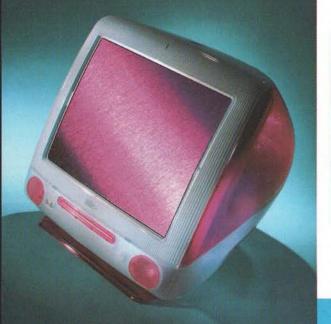
iMac's Best Friend

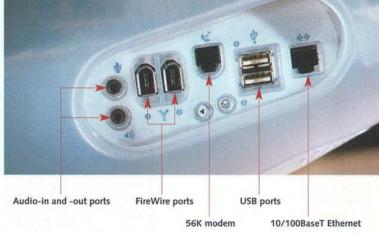
ONE THING THAT MOST COMPUTERS DO POORLY, REGARDLESS of processor speed or amount of RAM, is create pleasing sound. That's why Apple teamed up with renowned audiocomponent manufacturer Harman Kardon to create a bit of eye and ear candy to accompany the new iMacs.

The iSub is a \$99 USB subwoofer—a speaker that produces powerful bass sounds—that looks more like a jellyfish than a speaker; this 6-inch device belts out 20 watts of bass down to about 40Hz. And since the iSub is powered by USB, there's no need to plug it into the wall. (However, Power Mac G4 users shouldn't get too excited about the iSub: it's designed to work only with a new iMac.)

Harman Kardon built the subwoofer to complement the new iMac's built-in speakers, which it designed. The built-in speakers have an eight-octave range and are smart enough to know when the iSub is plugged in, divvying up the aural workload to create the best sound.

Will the iSub make it any easier to understand exactly what Bob Dylan is singing? Probably not. But it'll make listening to whatever it is he's singing a more pleasurable experience.—JONATHAN SEFF





iMac

iMac Redux Among the features of the new iMacs is a slot-loaded CD/DVD drive (right).

Easy Upgrades Just below the videoout port on the bottom of the iMac is an easily opened door behind which lie the iMac's memory-expansion slots—you can add as much as 512MB of RAM to these models. However, these new iMacs use a different memory format than their predecessors: industry-standard PC100 SDRAM DIMMs, the same type used in the Power Mac G4.

Link Them Up The easy-open door on the bottom of the iMac also makes it possible to add a \$99 AirPort wireless-networking card, which allows as many as ten AirPort-equipped computers to talk to each other or access the Internet through a base station, which can be up to 150 feet away.

This technology, first introduced with the iBook in August (see "Meet the iBook," October 1999), is also optionally available as part of the Power Mac G4. Both the G4 and the new iMacs can function as AirPort base stations. Whether AirPort technology will be a big hit, even outside of classrooms, remains to be seen—people may not feel they need to pay hundreds of dollars to link

their computers wirelessly when lowercost cabling can do the job (see "Link It Up," November 1999).

In any case, the new iMacs also include a V.90 56-Kbps modem and 10/100BaseT Ethernet connectivity, just like the old models. Both ports are accessible through the iMac's side panel, which also houses the USB and FireWire ports.

Sound and Fury

Two other quibbles that jaded Mac fans had with the original iMacs were tinny sound from the built-in speakers and poor gaming performance. Again, Apple has attempted to address those concerns with the new iMacs.

Now Hear This All of the iMac models come with built-in hi-fi stereo speakers

from high-end audio-component manufacturer Harman Kardon (see the sidebar "iMac's Best Friend") that definitely sound better than the iMac's original speakers.

Also, Apple has eliminated the iMac's cooling fan. A ring of air vents now surrounds the top handle, and a new convection cooling system keeps everything cool quietly. (It'll also induce thousands of cats to perch atop their owners' iMacs.)

Game Gear There's no denying that the old iMacs weren't exactly tailor-made for gamers. With only 32MB of RAM and an ATI Rage Pro graphics chip, they left serious Mac gamers looking past the iMac at a Power Mac or a Windows-based PC.

Apple may have changed all that with these new systems. The standard

THE NEW IMACS								
Model	List Price	Processor	L2 cache	RAM	Hard Drive	Optical Drive	RGB Video Out	FireWire
iMac	\$999	350MHz G3	512K	64MB	6GB	24× CD-ROM	no	no
iMac DV	\$1,299	400MHz G3	512K	64MB	10GB	DVD-ROM	yes	2 ports
iMac DV Special Edition	\$1,499	400MHz G3	512K	128MB	13GB	DVD-ROM	yes	2 ports

There's digital. And then there is Digital. The standard in optics meets on-the-edge technology Digital. The biggest name in cameras on the smallest package Digital. Extreme Digital. Canon PowerShot Digital. Visit our website to see just how far digital has come.

Power Shot

Power Shot (Minute) 2.1 MEGA DIGITAL CAMERA STO

are you digital yet

Canon

www.powershot.com

Circle 23 on card or www.macworld.com/getinfo

64MB of RAM (128MB on the iMac DV Special Edition) and the addition of ATI's Rage 128 VR 2D/3D graphics accelerator with 8MB of SDRAM graphics memory in an AGP 2× slot might encourage more game companies to develop for the Mac.

Those features, coupled with the under-\$1,000 starting price of the iMac, should make it an appealing option for novice or limited-budget users who are interested in playing games and surfing the Net. But if price is not a concern, most serious gamers will probably still prefer the flexibility, speed, and performance of a Power Mac G4 to the iMac.

Missing in Action

While Apple has done an excellent job of addressing many of the original iMac's shortcomings, there are still some nagging problems the company has failed to resolve. The child-size keyboard and hockey-puck mouse remain unchanged. Sure, they look cool, but what good is that when your fingers are cramped, your wrists are aching, and you've tossed that mutant mouse out the window?

And just as we said when we first saw the original iMac, we miss having some form of removable, writable storage media included in the package. While it appears Apple might succeed in killing the floppy, it seems unfair to force users to buy an external Zip or floppy drive if they want to easily transfer files without the benefit of a network.

Apple is heading in the right direction by increasing the memory on the iMac and making it much easier to add more, but the company hasn't gone far enough. Although 64MB might be sufficient for the base model, it doesn't make sense for the iMac DV. After all, Apple suggests not even running the bundled iMovie software on a 64MB machine unless you have virtual memory turned on. Since Apple wants consumer desktop video to become a reality, it

IMAC DV SPECIAL EDITION

Apple Gets It (Mostly) Right

WITH THE RELEASE OF THE LATEST IMAC, NO ONE CAN CONTEND that Apple ignores customer feedback. The new iMacs address the original models' most glaring weaknesses—an underabundance of RAM, poor 3-D-graphics-acceleration hardware, no ports for moving data to and from the machine rapidly, and cheesy-sounding speakers. In each of these areas, Apple made the right move—included 64MB of RAM in the base configuration; swapped out the lackluster ATI Rage Pro chip for an 8MB version of the more powerful ATI Rage 128; added two FireWire

ports; and installed higher-fidelity, Harman Kardon speakers. At the top of the line sits the iMac DV Special Edition (SE), a tricked-out iMac with a bigger price tag than the original iMac, but an equally large amount of computing firepower.

It's in the Numbers

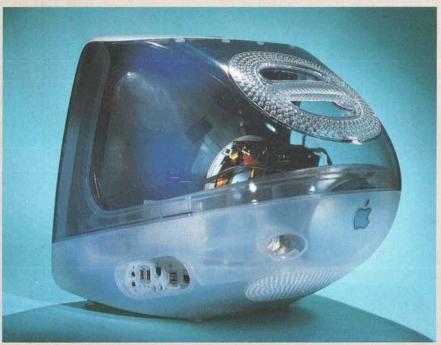
For a moderately priced consumer model, the iMac DV Special Edition packs a punch. The machine feels faster than a 333MHz first-generation iMac, and that feeling was reflected in Macworld Lab's

tests. The 400MHz iMac DV SE scored 20 percent higher than its predecessor in MacBench 5.0's Processor test—though it scored approximately 15 percent lower than a 400MHz Power Mac G3. That's probably due to the Power Mac's having a full megabyte of L2 cache, compared with the iMac DV's 512K.

Graphics scores were markedly improved in the iMac DV SE as well. Compared with the 333MHz iMac, the iMac DV SE scored 81 percent higher in MacBench's Graphics test. In terms of Quake framesper-second (fps) rates, this new iMac more than doubled the performance of the 333MHz iMac (from a miserable 17 fps to a very playable 37 fps). Thanks to the new Rage 128 graphics chip, graphics-intensive games such as Quake 3, Falcon 4.0, and Unreal Tournament are now playable—and enjoyable—on an iMac.

While we were very impressed by our iMac DV Special Edition's features and performance, the machine isn't perfect.

Not Faultless



Look Inside What's so special about the iMac DV Special Edition? A faster processor, more RAM, and a bigger hard drive than the regular iMac DV. Plus, a see-through case leaves nothing to the imagination.

would have made more sense to bundle iMovie only on machines that could handle it without dipping into problematic virtual memory.

Too Much Information Finally, a question about the iMac's new, less opaque plastics-especially the transparent plastic on the iMac DV Special Edition: do we really need to stare at our computers' guts?

Perhaps this is an attempt to demystify the computer and make it less intimidating. Maybe it's an appeal to geeks who love to see exposed components. Or maybe Apple's design team just thought it looked cool. (We didn't find the new

iMac's innards all that interesting to look at.) There's value in leaving something to the imagination, and the new iMacsespecially the Special Edition modelhave perhaps gone a bit too far.

The Last Word

Apple has accomplished a colossal feat with the release of the new iMacs: In a period of five months, the company has completely revamped its product line. The PowerBook G3 came out in May, the iBook was announced in July, the Power Mac G4 debuted in August, and now the new iMacs have arrived.

Despite some shortcomings, these

iMacs address many limitations of the original iMac and provide quite a few happy surprises as well. With the iMac, Apple struck gold-and regardless of the company's bet on desktop video becoming as popular as desktop publishing, it seems likely that the new iMacs will continue Apple's winning ways. After all, how could the development of a faster, smaller, quieter, more powerful, and less expensive computer be anything but a success? m

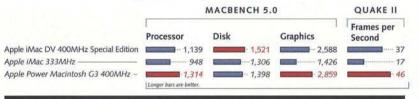
Assistant Editor FRITH BREITZER covers display and imaging hardware and Web design and development for Macworld.



iMac DV Special Edition

The iMac DV Special Edition is clearly faster than the previously top-of-the-line 333MHz iMac, but it's not as fast as a blue-and-white 400MHz Power Mac G3.

Best results in red. Reference systems in italics. MacBench 5.0 scores are relative to those of a first-generation Power Mac G3/300, which is assigned a score of 1,000 in each test.



Behind Our Tests

MacBench 5.0 testing was performed on systems with Mac OS 8.6, 128MB of RAM (64MB for the iMac 333MHz), a 2MB system disk cache, and virtual memory disabled. Quake II testing was done at a resolution of 640 by 480 pixels with 128MB of RAM in all systems.—Macworld Lab testing supervised by Gil Loyola

Among our niggling complaints is the fact that the speakers, while far better than those in previous models, still sound somewhat tinny and should probably be used with the iSub subwoofer if you really care about fidelity (see the sidebar "iMac's Best Friend"). Also, it would be nice if the built-in VGA port supported more resolutions than those native to the iMac DV. We also couldn't get Apple's Final Cut Pro to run on the iMac DV Special Edition, which was quite puzzling. After all, if this model is really intended for digital video, users should be able to choose any video-editing application they like-including those applications intended for professionals.

More troubling was the difficulty our iMac had recognizing certain USB devices. A Saitek Cyborg 3D USB joystick, for example, was not recognized on our iMac although it worked perfectly on a 450MHz Power Macintosh G3. Nor would the iMac boot when both a USB Zip drive and an Epson Stylus Photo 1200 printer were connected to it.

It's great that the iMac DV offers a DVD-ROM drive, but Apple's softwarebased decoding scheme for DVD movies is flawed. Within a minute of starting a DVD movie, the audio loses sync with the video. Also, whenever you activate a menu or change a controller setting within the Apple DVD Player, the video stutters and briefly becomes pixelated. Apple claims to be working on a fix for these problems.

Finally, we're disappointed that this Mac still has the same lack of expandability as its predecessors. Though Apple has done well to create an easy-opening door for RAM expansion, we would've preferred if there was also some soft of expansion slot behind that door.

Macworld's Buying Advice

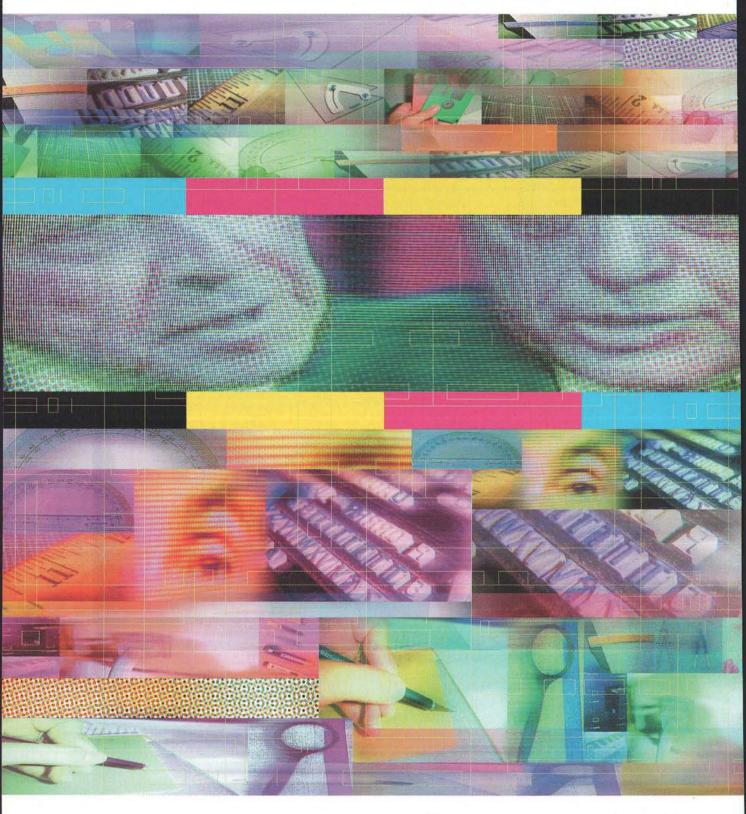
Some of our concerns with the iMac DV

Special Edition-such as compatibility with Final Cut Pro and PACE—affect users who would be more likely to buy a Power Mac G4 rather than an iMac. The USB and DVD issues, however, are sure to impact most users and should be high on Apple's fixit list. Yet despite these problems, we think Apple's done an admirable job of addressing the basic design flaws of the original iMac (save the execrable mouse and keyboard, of course) and has delivered a consumer Macintosh that we're very enthusiastic about. We're sure you will be too .- CHRISTOPHER BREEN

RATING: ### PROS: iMac now has great graphics, better speakers, a DVD-ROM drive, and FireWire. CONS: DVD playback loses sync; no expansion slot; crummy mouse and keyboard. COMPANY: Apple Computer (800/795-1000, www.apple.com). LIST PRICE: \$1,499.













QuarkXPress vs.
InDesign:

DESKTOP PUBLISHING JUST HASN'T

been the same since the early 1990s, when Aldus PageMaker and QuarkXPress stopped duking it out and Quark began its reign supreme. Oh, the exciting feature wars we had back then. Every release brought new

possibilities so fundamental that now we take them for granted: kerning, automatic hyphenation, style sheets, automatic drop caps, color separation—heck, even spelling checks.

Just in time for the year 2000, the

game is afoot again. With the release of Adobe InDesign 1.0, everyone is talking about desktop publishing. And everyone has an opinion about whether QuarkXPress or Adobe InDesign will win. We decided that this debate deserves more than just a review (see Reviews, December 1999, for the word on InDesign). So we invited two of Macworld's most trusted experts—QuarkXPress guru David Blatner, author of The QuarkXPress 4 Book and coauthor of Real World Photoshop 5 (both Peachpit Press, 1998), and Contributing Editor Deke McClelland, author of Adobe InDesign for Dummies and Photoshop 5 Bible, Gold Edition (both IDG Books Worldwide, 1999)—to have their say. Here they weigh in (and often disagree) about how Adobe InDesign 1.0 (\$739; 800/833-6687, www.adobe.com) and QuarkXPress 4.0 (\$719; 800/676-4575, www.quark.com) compare, and give their opinions about the claims flying around design-firm

THE GREAT Go Beyond the Hype DEBATE

watercoolers and prepress houses everywhere.

with Publishing Gurus

Deke McClelland and

David Blatner

CLAIM NO. I InDesign sets type better.

DAVID:

There's no doubt that InDesign's greatest strength is in its typesetting. Features such as optical kerning (which better calculates optimal character spacing) and Multi-line Composer (which calculates line breaks across multiple lines to get better-looking justified type) are very impressive. (For in-depth information about this topic, see "Setting Type in InDesign," Create, in this issue). Factor in the ability to insert "hidden" characters -frequently available in fonts but not accessible through the normal Mac keyboard-and support for the new Open-Type fonts, and you have an extraordinary opportunity to set great type with less effort. It's not that you can't create most of these effects by hand in XPress; it's just that InDesign makes it easy.

InDesign's text handling isn't all rosy, however. For instance, there's no way to justify text vertically inside a text frame (an easy task in QuarkXPress). What's more, InDesign's hard-core typography algorithms can require a lot of processing power, causing slower performance on older machines.

DEKE:

I can't vouch for the experience of others, but my personal experience with InDesign is that it runs relatively briskly -particularly with long documents-on

G3 or better machines. Still, I'm the first to admit that InDesign's recommended system requirements-the list includes a G3 processor, OS 8.5 or later, and 128MB of RAM-are excessive. (Ouark recommends that XPress users have 10MB of RAM.) I would be a baldfaced liar if I didn't admit that XPress fares better on slower systems.

But the topic is typesetting, not performance. (How quickly David has snared me into a tangential discussion! Clever boy, that one—I shall not underestimate him again.) And there are a couple of points we have missed so far. InDesign automatically inserts the proper ligatures and small caps when a separate small-cap font is available. It

splits out all designer styles for a typeface family to a separate pop-up menu, so you can't accidentally choose a font style that doesn't exist. Its drop-cap controls are precise and easy to access. These are subtle, sometimes obscure enhancements, but they can make a big difference in the quality of your text.

CLAIM NO. 2 XPress to InDesign.

DAVID:

As much as my InDesign-loving friend Deke would like you to believe this one, it unfortunately just ain't true. Even though Adobe claims that InDesign opens QuarkXPress documents, the program rarely does so without requiring significant cleanup afterward. And although InDesign does sport an XPress-like pasteboard, many other aspects will drive XPress users batty-from the creation and application of color to the fact that leading is a character attribute instead of a paragraph-wide setting. Similarly, character styles and text wrap work significantly differently in InDesign, which will trip up unsuspecting QuarkXPress users.

Perhaps more important, however, is companies' investment of so much time

and energy into building their infrastructure around XPress: finding reliable consultants, buying QuarkXTensions, training staff, writing AppleScripts, building a workflow. There's nothing inherently difficult in switching to InDesign,

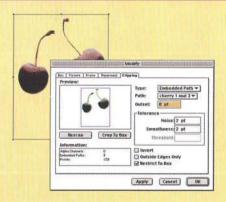
but given all these factors, I would certainly not call the process easy.



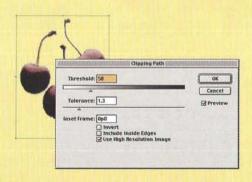
It depends on how you make the transition. If you decide to go whole hog and transfer every document in your archives from QuarkXPress to InDesign, you're in for a lot of pain and manual labor.

It's easy to switch from Quark-

CLIPPING CONVENIENCE



Q uark knows how important clipping paths are to graphic designers, and XPress's Clipping dialog box shows it (left). The ability to select from among multiple embedded paths, display the number of points on the Bézier



path, and break the image out from the boundaries of the picture box enables designers to really make the most of this technology. InDesign's clipping-path feature (right) is, by contrast, anemic.

But that's an unrealistic and unlikely approach. My advice is to change over incrementally, and primarily with new documents. InDesign does a first-rate job of opening and properly interpreting XPress templates. From there, it's just a matter of building new documents in InDesign. Not only is this the more sensible approach, but it's also the approach thousands of professionals took when transitioning from Page-Maker to XPress.

Two things to keep in mind: First, when you consider that Quark doesn't share information on its native file formats, it's flat-out amazing how good a job InDesign does interpreting XPress files. Line breaks and text wraps are bound to change, but all text, graphics, and basic formatting attributes will probably remain intact. Second, you can't stick with a program simply out of inertia. Change will be hard, but it's the price you pay to make the leap to a modern desktop-publishing program.

CLAIM NO. 3 QuarkXPress is harder to use.

DEKE:

OK, I have to admit a bias up front. Although I don't particularly like Page-Maker, I've long considered it to be easier to use than QuarkXPress. It isn't so much that XPress is unintuitive (although it often is); it's more that the interface is ill suited to "liquid workflow," that dreamy experience in which you sail through an application, hardly

thinking about where tools are and how to get things done.

Among my complaints, XPress's oddsize palettes block your view of the page, and you have limited means for selecting tools from the keyboard. (Is it too

much to ask for #-I or the ability to simply press the I key to select the Item tool?) There are also few context-sensitive pop-up menus, and—most disgracefully—you're limited to a single undo. Meanwhile, cross-platform designers have to contend with some perplexing keyboard mismaps: on the Mac, #-L checks spelling; on the PC, control-W does. Sometimes the option key corre-

sponds to the PC's Alt key, other times to its control key—you just never know.

If not interface perfection, InDesign is certainly an improvement. You can select tools from the keyboard, navigate by using techniques common to all Adobe applications, and rest assured that the shortcuts you learn on the Mac will transfer key-for-key when you have to do something on a PC. On a sour note, some shortcuts break down in text editing. But the ability to undo up to 300 consecutive operations makes up for that.

DAVID:

I have to admit that Deke makes some good points here. On the other hand, if QuarkXPress is so hard to use, why are two million people using it? There's no doubt that XPress's interface has some unintuitive aspects (such as text-box linking), but I absolutely disagree that InDesign is any easier to learn or use.

Granted, it's nice to use a program that looks and feels like it was written in the nineties (XPress still looks like software made in 1989). Yes, InDesign has multiple undos, dockable palettes, the ability to hang objects off the pasteboard, and really intuitive text chaining.

On the other hand, some interface issues baffle me—for example, having to look at three different palettes to figure out how to put a colored border around a box. And when you want to open a palette, you have to search through the menus to find it (the palettes aren't all listed in the same menu, as they are in Photoshop and XPress).

The one that really gets me is scaling text boxes. Start with 12-point text in a box, and then scale the box up to 500 percent. The Character palette still tells you that you have 12-point text in the box, even though it's obviously much larger. This is not easier to use; this is insane!

CLAIM NO. 4 InDesign is not yet appro-

priate for quick-turnaround publishing.

DAVID:

Although InDesign 1.0 will certainly be useful for a few people, it's pretty clear to me that it will take a few revisions before it's really useful for the majority of users.

SUBTLE AUTOMATION

So you passed

and you're feeling pretty proud of yourself. Possibly, you forgot that David Soul-famous from TV's Starsky and Hutch-sang "Don't Give Up on Us." And very likely, no one ever brought it to your attention that the song writing team of Murray & Callander who gave us "Billy, Don't Be a Hero" also penned "The Night Chicago Died." (Wow, lightning really does strike twice!) But you knew what you needed to know to get through the quiz. And now, thanks to us, you can't get those ghastly tunes out of your head.

So you passed the first test

and you're feeling pretty proud of yourself. Possibly, you forgot that David Soul—famous from TV's Sursky and Huuch—sang "Don't Give Up on Us." And very likely, no one ever brought it to your attention that the song writing team of Murray & Callander who gave us "Billy, Don't Be a Hero" also penned "The Night Chicago Died." (Wow, lightning really does strike twice!) But you knew what you needed to know to get through the quiz. And now, thanks to us, you can't get those ghastly tunes out of your head.

ecause QuarkXPress hyphen-B ates just one line of type at a time, the word spacing in the top example becomes progressively looser as you read down the column. InDesign's Multi-line Composer feature, on the other hand, continuously looks several lines ahead, ensuring more-consistent spacing. Add to this InDesign's other type features, including optical kerning, hanging punctuation, and automatic ligature replacement -all evident in the bottom example (results circled)-and you get an evenly balanced block of text.

QuarkXPress has spent years developing crucial production features such as longdocument controls (indexing, books), object-level trapping, and text on a path.

Plus, as I noted earlier, the product itself isn't the only thing that counts anymore. How long will it take for service bureaus, printers, and third-party software (such as trapping and imposition software) to fully embrace and support InDesign? Everyone is familiar with QuarkXPress, faults and all, and that means more efficiency.

DEKE:

It's been a mighty long time since I worked in a service bureau-frankly, longer than I care to admit. But I can tell you, back in my day, when a hot new program like InDesign hit the market, we busted our behinds trying to add some level of support, and I imagine the same is true today. Furthermore, Adobe is a significant enough player in the electronic-publishing market to make a major play at the service bureaus and commercial print houses. If you walk in the door and ask to print an InDesign file, my guess is the guy behind the counter will respond, "How fast?" Even if he balks, you have alternatives. I laid out a 48-page Photoshop 5.5 insert for my

Photoshop 5 Bible, Gold Edition in InDesign, knowing full well that my publisher had no way to print it. To make the file foolproof, I merely exported it as a PDF file. The result: 48 pages, two spot colors, no problems.

CLAIM NO. 5 Creating PDF files is much harder in QuarkXPress.

DEKE:

Adobe's Portable Document Format is to multipage documents what EPS is to single-page illustrations—it's a means for trading printable files with anyone on the planet, without the need for the originating application. Sadly, XPress does not directly export to PDF. Instead, you have to shell out some extra cash (\$249) for Adobe Acrobat, which can distill an XPress document printed to disk as a PostScript file.

Contrary to early publicity, PDF is not InDesign's native file format. However, InDesign does permit you to export a file to PDF. The downside is that InDesign supports PDF 1.3 only, which requires Acrobat Reader 4 or later (the reader is a free download, so it's not hard to get). Regardless, InDesign's PDF support is way the heck preferable to XPress's no support at all.

DAVID:

Although I think InDesign's ability to export PDFs directly to disk without using Acrobat Distiller is great, I believe that QuarkXPress still has a leg up on the PDF front. Where InDesign's PDFs can be read only by Acrobat 4 Reader, a PDF made with XPress and Distiller can be read by the vast majority of Acrobat Reader versions out there (not all of us have time to go get every new version of a program, even if it is a free download). More important, according to Quark, XPress 4.1 (which should be available by the time you read this) will automatically build hyperlinks for tables of contents and indexes. InDesign has no hyperlink functionality.

CLAIM NO. 6 Exporting HTML is easier in InDesign.

DAVID:

It's not that InDesign makes HTML easier; it's simply that InDesign has some more-powerful HTML features. Sure, InDesign exports pages as fully

rendered HTML files, with columns, cascading style sheets, and linked graphics neatly organized in a folder. By itself, QuarkXPress 4.0 has no HTML export features. Although you can download the free Quark HTML Text Export XTension (www.quark.com/files), which lets you export text only from a single story. QuarkXPress 4.1 should also let you import simple HTML text, which InDesign doesn't currently do. Personally, I wish that each of these companies would leave this sort of thing to third-party plug-ins-such as the \$300 Extensis BeyondPress (800/ 796-9798, www.extensis.com)-and focus energy on getting the rest of its program beefed up.

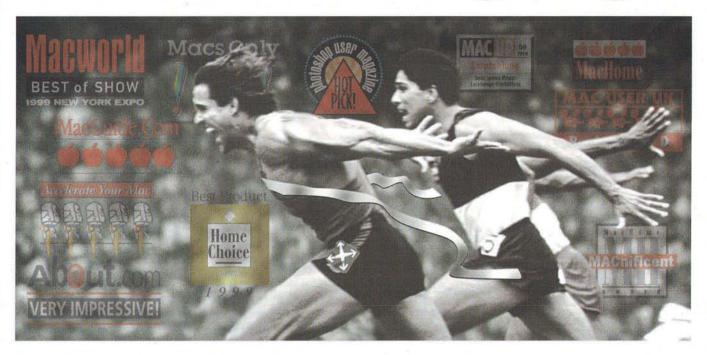


nDesign lets you take a laidout page (top) and export it as a fully built HTML document (bottom). The downside? You can't create hyperlinks in InDesign—no small drawback. By contrast, Quark-XPress permits you to export HTML as text only. If you're willing to spend some extra cash, however, QuarkXTensions, such as Extensis BeyondPress, can help.

DEKE:

Although David's brains are soft and watery, I find myself inexplicably compelled to agree with him—if only this once. InDesign does have some nice HTML features. Sadly, however, the program is incapable of doing some very basic things, such as—most critically—creating hyperlinks beyond

Get the Winning Edge.



From QuickTime® video to PowerPC® G4, XLR8® products lead the pack in every category.

Right out of the gate, it may look like the field is full of speed and expansion options. Looks can be deceiving. When it's down to a photo finish, XLR8 products win the race for you.

We push the edge when it comes to innovation so you get the "best of the best" for your Mac®. That's why industry experts are awarding top honors to our patent-pending Carrier G3/G4 Upgrade Technology™ and InterView™— the first USB product to turn the iMac into a true media machine. These products earn blue ribbon status by delivering the winner's edge, right out of the box.

XLR8, tools to perform and create... on your Mac.



MACh Carrier™ G3 and G4 delivers maximum ZIF upgradable performance for pre-G3 Macs. Patent-pending.







InterView™ w/VideoShop 4.5 provides exclusive A/V capture and editing for Mac USB and PCI. InterView for the internet.

> Mac Home Journal "1999 Best Product of the Year"





888-XLR8TOR • www.xlr8.com

Interex, Inc. • 8447 E. 35th St. N. • Wichita, KS 67226 • 316-636-5544 • 316-636-4639 fax
Other brand and product names are trademarks or registered trademarks of their respective holders. Product specifications subject to change without notice. @1999 Interex, Inc.

simple Next and Previous links that take you to other pages. So although you might find InDesign helpful if you need to repurpose a flier or another simple document as a Web page, be prepared to spend some time in BBEdit or an equivalent HTML-editing tool. Otherwise, you're probably better off rendering the page as a PDF file so you can post the document with all formatting intact (minus hyperlinks, of course).

Oh, and just joking about David's brains. Despite prolonged exposure to QuarkXPress, his skull remains firm and fully packed.

CLAIM NO. 7 QuarkXPress's color features beat InDesign's hands down.

DAVID:

My brains might be a bit slippery, but I'm still cognizant enough to know that when it comes to color, neither InDesign nor XPress wins.

InDesign has excellent color tools . . . with a lousy user interface. For example, you can choose from a plethora of color libraries (Pantone, Trumatch, Web, and so on), but you can't access them from within the New Color Swatch dialog box—rather, you

have to open another dang palette and then choose from the list on a pop-up menu. Adobe also left out the ability to mix spot colors (as you can with QuarkXPress's Multi-Ink feature), which is very useful when building two- or three-color documents. Be that as it may, when it comes to color management, building gradients, and the inclusion of a "Paper" color, InDesign's color features stand up to or exceed those in XPress.

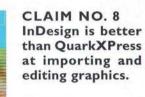
DEKE:

I also don't think either program's color features are anything to write home about—unless you're in the mood to write something nasty. InDesign lacks an eyedropper for copying colors between objects, and you can't drag and drop colors

between palettes. Creating spot-color gradients is a pain in the neck: you have to separate palettes from their default locations in order to get much work done, and the Overprint options are squirreled away by themselves in a palette labeled Attributes—as if attributes were somehow synonymous with stuff that doesn't go anywhere else.

But lest you think XPress is a model citizen, think again. You have to create

and name colors in a modal dialog box—there's no provision for mixing a quick color on the fly via a palette. You can drag and drop a color, but if you do, you can't undo. And gradients are limited to two colors. XPress beats InDesign in trapping, but InDesign wins points for its image-by-image control over color management. In other words, where color is concerned, I'd say these two programs are in a dead heat.

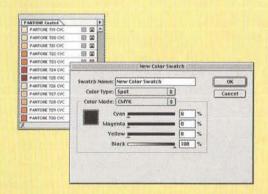


DEKE:

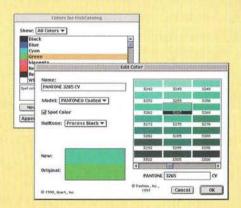
Not surprisingly, the maker of Adobe Photo-

shop and Illustrator has packed some amazing graphics-handling features into its new program InDesign. You can preview TIFF images and EPS illustrations at unlimited resolutions, essential when you want to precisely align an imported graphic with a line of type or another page element. By comparison, the low-resolution previews in XPress and PageMaker are a cruel and inaccurate joke. InDesign also sports a first-

COLOR CONTRASTS



verall, QuarkXPress and InDesign both do a mediocre job with color, but in some areas, XPress has the advantage. For example, both InDesign and QuarkXPress let you include Pantone, Trumatch, and other swatch-book colors in your documents, but InDesign makes it difficult. You must open a separate palette for each swatch book



(left), you cannot drag and drop colors, and you cannot access these colors from within the New Color Swatch or Edit Color Swatch dialog boxes (you can't even change one PMS color into another one easily). QuarkXPress's Edit Color dialog box (right) is not much to look at, but it's much more versatile.



Lt doesn't come

with a standard floppy drive.

After all, why would you want

a standard floppy drive.

So you bought an iMac. And now you are in the market for a disk drive that will allow you the capacity to enjoy our multimedia world. Sounds like a plan.

But what about your old floppy disks, you ask? Not to worry. Get a SuperDisk drive, the drive that accepts 120 MB SuperDisk diskettes and your old floppies, giving you easy and immediate access to all of your files, old and new. Maxell SuperDisk diskettes use the same reliable technology as your floppies, and even function in virtually the same way.

Hey, you're going to buy a drive for that iMac. Make sure it's one that can handle all of your big ideas. And, equally important, your smaller ones.







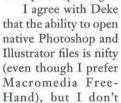
rate Links palette for managing and embedding placed graphics. You can jump right to an image in your document just by option—double-clicking on it in the palette. Finally, if you place a native Photoshop or Illustrator file, InDesign will interpret all the layers inside the file and even let you edit the graphic in the originating application.

InDesign lets you apply gradients to live type-heck, you can even stroke type with a gradient. And finally, you can edit the clipping paths assigned to an imported graphic. Unlike in XPress 4.0, you never run the risk of clipping an image with a random path that was never intended to be a clipping path in the first place. (Thankfully, this problem should be fixed in XPress 4.1.) On the downside, InDesign's path-editing tools are pretty rough. For example, you can't select more than one point at a time, making it difficult to move straight edges or other segments involving aligned clusters of points.

DAVID:

InDesign is good at handling graphics, but QuarkXPress is better. For instance, XPress lets you choose a clipping path from among multiple embedded paths in a TIFF image. InDesign can read a single embedded path, but

you have to convert the path into a picture box upon importing it.



think this is necessarily a good thing to do in a real-world workflow. Call me old-fashioned, but I still much prefer to rely on TIFFs and EPS files.

CLAIM NO. 9

InDesign's plug-in architecture is revolutionary and will help it beat XPress in the long run.

DEKE

Never were truer words plunked down upon a page! Current publishing programs have been notoriously slow to respond to market conditions. Product managers seek guidance from users;

THE FEATURES WAR: QUARKXPRESS 4.0

Comparing a brand-new product with one that's ten years old is rarely a pretty sight. But although Adobe acknowledges that its new program isn't going to win a features war right off the bat, InDesign fares better than you might expect. This list covers primarily features that exist in one program but not the other. However, in some cases, neither

	QuarkXPress 4.0	InDesign 1.0
TEXT AND TYPOGRAPHY		
Character styles		
Automatic ligatures		•
Hanging punctuation	0	•
Optical kerning	0	•
Multiline hyphenation and justification (H&J)	0	•
Vertical justification of text	•	0
Multiple-language support	04	•
Ability to apply strokes and blends to text	0	•
Text on a path		0
Unicode support	0	•
Customizable tracking and kerning tables		0
PAGE LAYOUT		
Custom lines		• 8
Display PostScript		•
Tables Tables	0	0
Layers palette	0	
Objects can extend past pasteboard	0	•
Master pages based on other master pages	0	•
Proxy tool in Measurements palette	0	•
Guides can be treated as objects	0	
Document-page-to-master-page conversion	0	•
Assign specific space between objects		0
Duplicate objects as you transform	0	•
Suppress printout of objects	•	0
ОИТРИТ		
Create PDFs without Adobe Distiller	Ö	•
Preflight feature	0	•
HTML export	O.c.	•
In-software trapping	•0	0
Collects fonts with files for output	0	•
Printer's spreads	0	OF

• = yes; ○ = no. *Requires \$1,595 QuarkPassport. *InDesign has few line options and is more labor-intensive; you can specify only dash and space settings for individual lines. *Text only, with free HTML Text Export Xtension. *O XPress's trapping feature isn't great. InDesign requires PostScript 3 printer with the In-RIP trapping option. *Will work if you install Adobe

receive bucketloads of suggestions; and then sequester themselves in their offices, only to emerge 18 months or a few years later with a program that is, in many respects, obsolete on arrival. Yesterday's needs are met, but today's are not.

By contrast, InDesign's expandable

architecture permits speedier reaction to users' needs. This spring, Adobe plans to ship InCopy, a separate program that works closely in conjunction with InDesign and permits editors to tweak and copyfit text while seeing the results of their efforts on a laid-out

VERSUS ADOBE INDESIGN 1.0

product includes the feature yet. Yes, we're fully aware that many of these functions can be performed in QuarkXPress and InDesign if you buy commercial or shareware XTensions, plug-ins, or AppleScripts, but for the sake of this comparison, we're ignoring them.—DAVID BLATNER

	QuarkXPress 4.0	InDesign 1.0
GRAPHICS		
High-resolution screen previews	OF.	
Clipping paths in TIFFs	•	• 6
Path operations (merge, union, and so on)	•	0
Edit imported vector art	0	
Tonal correction for TIFFs		0
Convert text to outlines		•
Import PDFs as graphics		•
Select two or more points on a path	•	0
Text wrap around graphics	•	•н
PUBLICATIONS		
Create books (multiple documents as one)		0
Indexing		
Tables of contents		0
Opens other page-layout-program formats	Marie o la	A A SA
Different-size pages in document		0
INTERFACE		
Editable keystrokes	0	
Scriptable		• (v.s.)
Tabbed palettes ("dockable")	0	•
Support for Mac OS 7 and 8	•	O!
Customizable tool preferences	•	0
Multiple undo's	0	•
Scale tool	0	
Navigation palette	0	
Multiple views of document	0	•
COLOR		
Ability to mix spot colors		0
Gradient swatches	0	
Tint swatches	0	•
Drag-and-drop color	•	0
"Paper" color	0	•

PostScript driver 8.6 (Included on installation CD). * Can preview TIFFs and JPEGs with Enhance Preview XT-SE, included with XPress 4.1 install. * Minimal support, requires conversion of path to frame shape. * Awkward; wraps only around frame shape. * Only on the Macintosh. * Requires Mac OS 8.5 or later.

page. Meanwhile, rumor has it that Adobe is already working on the next version of InDesign, which should answer the concerns of many current users. I won't say XPress can't keep up—if it can, all the better for us—but Quark has its work cut out for it.

DAVID:

Sorry, Deke, I've got to disagree with you here. Sure, InDesign was written from the ground up to be highly extensible and modular, and yes, this is pretty cool. But when it comes to what this means in the real world. I'm not that excited.

There are over 350 XTensions available for QuarkXPress today, and still only a small percentage of people use them (although they should!). I don't

see companies suddenly thinking, "Gosh, now that InDesign is out, we will start buying plug-ins."

Similarly, even though InDesign's modular nature means that Adobe can update the software more eas-



ily and frequently, this doesn't necessarily make users' lives any easier—it may mean more upgrades to manage and pay for, more stuff to learn, more chance of problems in workgroups, and so on.

So, which would you buy if you had to choose today?

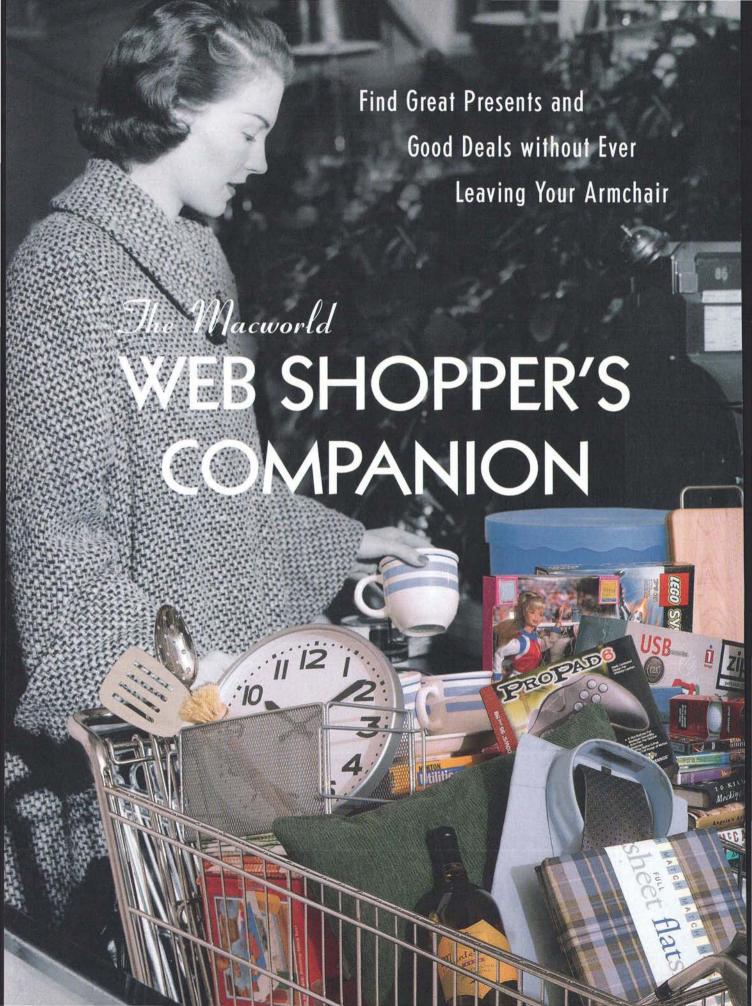
DAVID:

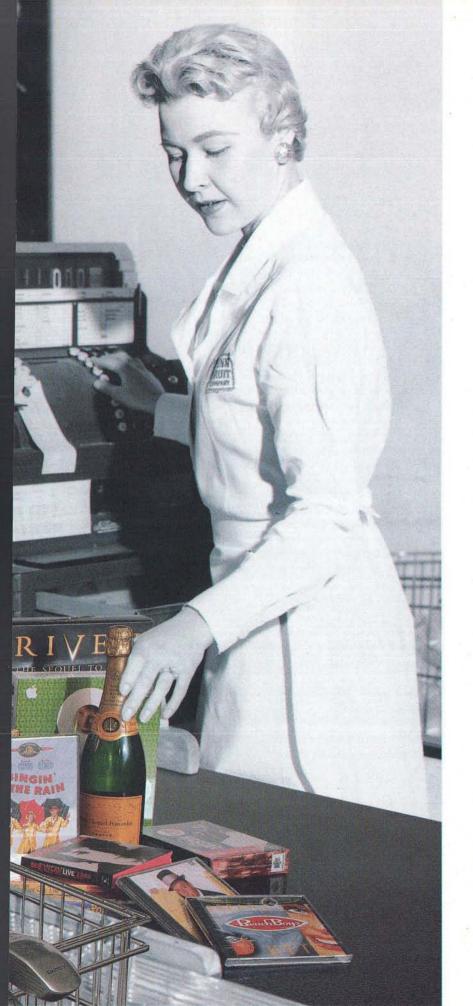
This is like asking, Which is better, TIFF or EPS? The answer: neither is inherently better; you should choose the one that offers the features you need. I know I'm going to be able to get my work done today with QuarkXPress. I know that InDesign is going to be a rockin' program sometime next year when the next revision comes out. I also know that Quark gets inspired by competition (which it hasn't really had for several years). I think I'd have to go with QuarkXPress.

DEKE.

There's no doubt that InDesign is the best news for XPress users in the last ten years. The worst-case scenario is that it will give Quark the incentive it needs in order to get off its duff and improve the quality of its program. Best-case, it provides you with an alternative. Although even I won't go so far as to pronounce InDesign the definitive publishing application, I urge anyone who's even considered abandoning QuarkXPress to give it a try. InDesign does enough things better than XPress to warrant a test drive. And who knows? If you and InDesign hit it off, you may find vourself entering a long-term relationship with the program—just like me. m

DAVID BLATNER is the author of several books, including *The QuarkXPress 4 Book*. DEKE McCLELLAND's newest project is a 20-part video series titled *Total Photoshop*.







ou don't have to fight traffic. There aren't any crowds. And no one's piping in that constant annoying stream of Christmas carols. And the best part? You're in your own home, sipping a little eggnog, at any hour you want.

We're talking, of course, about Internet shopping. E-commerce has come of age, and it's not just about books and records anymore. Want some name-brand or discount clothing? No problem. Shopping for a golfer or a fly fisher? From putters to muddlers, it's all online. Need to buy a food processor? Would you prefer it with or without the juicer attachment? Heck, if you're looking for vintage metal lunch boxes or rare Pez dispensers, there's just no better place to find them.

So there you are, mouse and credit card in hand—ready to click your way into a mall whose size defies imagination. But where do you start, and what should you watch out for?

by Elliot Zaret

You've probably developed your own set of tricks for navigating the crowded December shopping malls, including, perhaps, the location of frequently overlooked parking places. Let us share with you some tricks of our own. We not only found the best places to shop (see the sidebar "The Best Shopping Sites"), but we also figured out the best ways to shop.

After all, online buying has its own problems, from security issues to the challenge of picking the right color sweater on your old and faded monitor. But it also has its own rewards—this holiday season, you will be able to find that perfect gift without ever leaving the comfort of your ergonomic chair.

Being a Savvy Shopper

The Web is a lot like the real world, and how you approach it can vary widely, depending on how you like to shop. Do you know what you want and just need to find it cheap? Do you like to browse? Is there a store or a brand you prefer? Is customer service your biggest concern? All these factors influence you, whether

you're pushing your basket down the aisles in Target or making a beeline for gap.com. But however you shop, some general principles will help as you navigate the online world.

Check Return Policies Some things are more suited to online shopping than others. CDs are a cinch—you know exactly what you're getting—but it's tough to tell how clothing is going to fit or what colors will look like exactly. For things you'll need to try on (or see on the person you're giving the present), be very aware of the site's return policy. You don't want to get stuck with lame merchandise or a hefty "restocking fee."

Also check for interactive features that can help you make a good decision. For example, for those who are shopping for a new couch or bed, the Furniture .com site's Room Planner feature lets site visitors arrange furniture on a virtual floor plan to see what fits. If you're looking for clothes, you may find the new "Your Personal Model" at the Lands' End site (www .landsend.com) interesting. The site asks you to answer a series of questions about your body. Then it creates a 3-D model, based on your description, on which you can try different outfits. If you're shopping for your guy friends, you're out of luck. This feature is for women only.

Notice Secure Servers Always make sure a site has a secure server before you

type in your credit-card information. So how can you check? Look for a little closed lock at the bot-

tom of your browser window, and read the site's security procedures (any site worth its salt will have a section about this). If you want to take an extra precaution, use only one credit card for shopping online, so that you can keep track of your purchases.

Don't spend a lot of energy worrying about your card number being stolen. It's actually safer to shop online than to physically hand the card to a harried holiday-help hiree who might forget to give it back to you. And there's no chance you'll accidentally leave the card on the counter either.

Figure Real Prices Don't assume that something is cheaper online just because it has a low price tag. You still have to add in shipping and handling. That CD that's a bargain at \$11.99 isn't such a steal after you've added \$3 for shipping. So when you're comparing prices, make sure you're taking the total cost into account.

Check Timing Look carefully at the shipping dates. Some sites, such as Amazon, make it very clear whether your item

The Best Shopping Sites

Best Music Site

Amazon.com (www.amazon.com)

Amazon has the best customer service of any large-scale (yes, it is large-scale now!) store, real or virtual, hands down. It's even been known to mail a prepaid-return box to customers who changed their mind after a CD shipped. Plus, a quick, but by no means comprehensive, check confirmed that Amazon is usually less expensive than its main rivals in the music world (CDNow and Barnes & Noble) and adds valuable extra info about how long each item will take to ship. Amazon offers one gift-wrapping option for CDs and can include a personal message on the packing slip.

Runner-up CDNow (www.cdnow.com) does have one cool feature that Amazon lacks: you can make your own compilation CD of your favorite songs—kind of like those "mix tapes" you made in high school. It's definitely worth checking out.

Best Book Site

Amazon.com (www.amazon.com)

Amazon gets the nod again for many of the same reasons it wins in the music category. It has among the best prices on the Net, a good selection, and above all, fabulous service. Little touches such as "One-click" shopping and user ratings and reviews of books have made Amazon synonymous with online shopping.

Runner-up Barnes & Noble (www.bn.com) is nearly identical. Both sites' selections are quite comprehensive, but they're not equal in all areas. If you can't find what you want at Amazon, check here.

Best Clothing Site

Bluefly (www.bluefly.com)

Bluefly lives up to its promise of being an outlet mall on the Web with bargain prices on items from Calvin Klein, Donna Karan, and Liz Claiborne, to name just a few. Search by price range in any category-it's like making your own bargain rack. It does not offer gift wrapping. A strong runner-up is AOL's Chic Simple (www.aol.com/shopping /chicsimple). This section of America Online's shopping site acts like a splashy interactive catalog with suggestions on outfits and clothing and fashion advice. Click on an item, and you're sent to a name-brand store such as The Gap, Eddie Bauer, Dockers, or J.Crew. Sorry, guys, this site is for women only. Bluefly also sells accessories, such as hats and ties.

will arrive within 24 hours or whether it will be three to five days before they even put it in the mail. Other sites, however, aren't so up-front. Even if you pay for overnight shipping, you may not get your item the next day if it's not in stock. This consideration is especially important around high-volume shopping times such as the holiday season.

Inspect the Wrapping Options If you have far-flung family and friends, online shopping can truly be a balm for the holiday-shopping blues. How? By saving you the time, money, and sweat involved with wrapping, packing, and mailing your gifts. Many sites wrap presents in festive paper and include a card, but not all sites' services are created equal. Often a "personalized card" translates to a message typed on the packing slip (see the sidebar "What They'll Get").

Be Patient As convenient as online shopping can be, it's not without its annoyances. With record numbers of shoppers expected online this year, no one knows how the computers that run the stores (the *servers* behind the scenes) will handle the traffic.

Your shopping spree could end up in the virtual equivalent of a bumper-tobumper mall parking lot, with slow connections and long waits for pictures to download. If you're going to do your holiday shopping on the Net, be prepared to spend some time doing it. If you can, try to surf in the wee hours, when your competitors might be otherwise occupied.

Browsing with Your Browser

Once upon a time, there was a big divide between "e-tailers" and the traditional bricks-and-mortar retailers. But that was way back in 1998. Today, most brandname stores have joined the fray. Think "clicks and mortar" or "bricks and clicks."

If you have a favorite store, try typing its name into your browser. The Gap, Eddie Bauer, Victoria's Secret, Bloomingdale's, Nordstrom—just name your favorite place to spend money at the mall, and it's likely to have an online store now. In addition, you'll find traditional catalog merchants, such as REI, L.L. Bean, and Hammacher Schlemmer, online.

What if you're not quite sure what you want to buy for Aunt Mary or you don't have a favorite store? Start by window shopping.

Wander the Mall
In order to cash in on
the holiday-shopping
buzz around electronic
commerce, all the Internet's top names have added
directories that allow you to
browse by category or search
across sites for general items

you think you might be interested in (for example, "lunch box" or "dog sweater"). In most cases, you can see a preview of items before jumping to the site where they're for sale. This is a good way to find stores you'd never run across otherwise.

There are plenty of places to do your browsing. Yahoo Shopping (http://shopping.yahoo.com/) is classic Yahoo: it's a big directory of shopping categories, all with the Yahoo look-and-feel, and everything can be bought with one cart. America Online takes another approach with its shopping sites—Shop@AOL, Shop@ Netscape, and Shop@CompuServe. AOL shopping (www.aol.com/shopping/home.html) looks like one big glossy catalog, complete with suggestions for ensembles—click on a product, and you are taken to one of AOL's merchant partners to buy it.

Excite (www.excite.com/shopping), once the king of search engines, has paired with Intel to create a huge database of vendors and items you can search for. Lycos (www.lycos .com/shopnet) has latched onto some pretty nifty shopping-comparison tools, such as Frictionless Commerce and Active Buyer's Guide, that help you decide what product will best suit your needs in a given area. And MSN (http://

Best Toy Site

eToys (www.etoys.com)

If you're looking for the widest toy selection online, plus a crisp layout that lets you shop by age and category, then eToys is for you. The site offers many gift-wrapping options and personalized cards. Amazon Toys doesn't offer the same variety, but it stands out for its well-written descriptions, customer rankings, and the ability to download sound files of toys that make noise.

Best Kitchenware Site

Crate & Barrel (www.crateandbarrel.com)

This site offers the same dishes, glassware, silverware, stemware, furniture, and knick-knacks as the Crate & Barrel stores. It also keeps the clean, open feel of the stores'

white walls and maple display stands. Stemware ordered from the site arrived unbroken, due to the company's meticulous and elaborate packing procedures: the glasses were wrapped in paper and bubble pack and then placed in an oversize box full of Styrofoam peanuts. The site doesn't offer gift wrapping, but you can sign up to receive a "gift reminder" e-mail if you need a little help remembering important events. You can also select and send items online from Crate & Barrel's gift (in other words "wedding") registry.

Best Golf-Goods Site

Chipshot.com (www.chipshot.com)

If you're shopping for a golfer, you shouldn't miss this site. It sells everything from clubs to clothing, plus it has great product information

and tips on how to better your game, as well as an entire section devoted to lefties. Chipshot offers gift certificates in addition to gift wrapping for all but the largest purchases (such as golf bags and carts).

Best Wine Site

Wine.com (www.wine.com)

Not only does Wine.com offer a huge selection and detailed background information on wine but it also has a sense of humor. The "Virtual Sommelier" guides you to wines that offer the best "bang for the buck," and you can send questions addressed to "Ask the Cork Dork." Search for wines by type, price, origin, or style (sweet, dry, full-bodied, and so on). You can include a card with your purchase, but the site does not yet offer gift wrapping.

shopping.msn.com) has taken the name-brand approach, connecting you to the merchants you know and love.

When shopping around, don't forget to take a look at Amazon (www.amazon.com), which has branched off from its original mission of selling books and music. Amazon now

sells electronics, toys, and videos, too. It also has links to partner sites for lots of things it doesn't sell, such as clothing, sporting goods, pet supplies, and wine. At press time, Amazon announced that it would soon expand its services to let small and large merchants sell goods through its site. Watch for these new "zShops."

Getting to a Great Deal

Once you've found what you want, the Web makes it easy to see if you can get your item somewhere cheaper or faster, or with better customer-service policies. Some clever shopping sites can help you find just about anything you want for the best price possible.

Cruise Comparison Sites Among the best places to see if you can get what you want for less are MySimon (www.mysimon.com), BottomDollar (www.bottomdollar.com), and Compare-it.net (www.compare-it.net), which all let you do comparison shopping.

For one-stop bargain hunting, check out Buy.com (www.buy.com), which sells many items below their actual cost and makes up the difference by selling advertising on its site. For clothing, don't miss Bluefly (www.bluefly.com), which sells name-brand apparel at a hefty discount—and includes free shipping. (Don't miss the search-by-price feature!)

Hit the Auctions And, of course, there are the auction sites. You've undoubtedly heard about these wild-and-woolly sites where individuals sell whatever they want (barring body parts and guns) to the highest bidder.

The reigning auction king is eBay (www.ebay.com), a great place to find unique gifts and used electronics. This site is so popular that it's sometimes hard to find true bargains (\$100 computers, for example) anymore, because someone who knows their value has probably already bid on them. But the site's size does make it easier to find the rarest of items, such

as an out-of-print Winniethe-Pooh Pez dispenser sold by a guy in Slovenia.

If you're trolling primarily for bargains, check out other sites that have auctions, such as Amazon (http://auctions.amazon.com) or Yahoo (http://

auctions.yahoo.com). For new electronics equipment, OnSale.com (www onsale.com) is a good place to look. You may also want to check Bidder's Edge (www.biddersedge.com), a free service that allows you to search for items across many different auction sites.

amazon.com

Browser, Beware Play it safe when auction shopping. Stick to well-established sites, read the rules, and pay for fraud insurance if the site offers that option. The built-in insurance policy at eBay will reimburse you up to \$200 with a \$25 deductible, but only if you meet the "Insurance Guidelines." These include following all the auction rules and require that both the buyer and seller have a good reputation (as judged by the feedback they've gotten from other auction-goers).

Auction goods are typically sold in "as

is" condition, and there's little chance of a return policy or a warranty. Ask the seller to insure the shipment so at least you'll be protected while it's in the mail. One final tip: Always pay with a credit card or an escrow service. For a small service charge, escrow services (eBay recommends iescrow, at www.iescrow.com/ebay) handle your payment and give the money to the sellers only after the item has arrived in satisfactory condition. Sound like a hassle? Then take note: According to the National Consumers League, the great majority of online-fraud complaints concern cash and money-order auction sales.

The Last Word

Online shopping probably won't save you from ever setting foot in the mall again. If you hate crowds, however, you'll appreciate the fact that you can take care of a whole hunk of your holiday shopping this way. With a little patience and the tips you've read here, shopping might even be fun this year. **m**

ELLIOT ZARET covers e-commerce for MSNBC .com. Much to the chagrin of his company's mailroom, he does nearly all his shopping online.

What They'll Get

One of the best things about buying gifts online is that you save the time you'd spend wrapping, packing, and taking your gifts to the post office. But will your friends and relatives actually get what you send?

We ordered a video from Amazon and two books from Barnes & Noble. Both sites said the items were in stock. We picked our wrapping paper-both sites charged an additional \$2-and wrote our gift messages. We spent about \$12.95 in shipping and wrapping charges (for next day delivery). Our package from Amazon came on time, but in the wrong wrapping paper. (Amazon does warn about substitutions.) Our books from Barnes & Noble came in the right paper three days late. The messages we'd included were easy to misstyped at the bottom of the packing slips. We would have preferred an actual card, but this sufficed. Don't count on your gifts arriving exactly as you'd hoped. Your mom will never know you wanted silver wrapping paper. She'll just be glad you thought of her.



STAR WARS EPISODE I A C = -



TWO ENGINES. ONE CHAMPION. NO LIMITS.







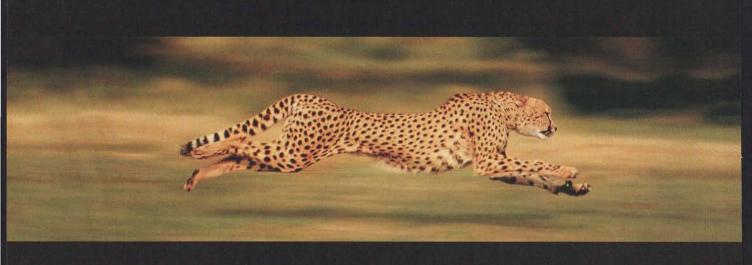






starwarsracer.com

Lucasfilm Ltd. & TM. All rights reserved. Used under authorization.



SIMPLY FAST

You bought your Power Macintosh® for speed, simplicity, and elegance. A Sonnet processor upgrade helps you keep it that way. Simply plug in a Sonnet G3 or G4 card into your existing computer configuration and instantly work faster. For more information, call us at 1.949.261.2800 or visit our website at:

www.sonnettech.com



Commoto State of the state of t

Join the Infrared Revival

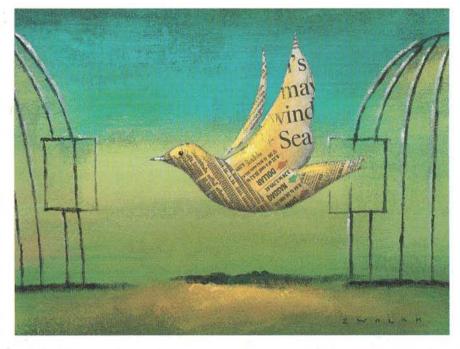
YOU MAY ALREADY HAVE FREE WIRELESS TECHNOLOGY

by Joseph Schorr

he infrared (IR) port included on most PowerBooks is-how can we put this politely?-not a feature most users appreciate. Frankly, I never even noticed the tiny IR port nestled on the back of my PowerBook G3 until the day it happened to save my career. A colleague and I discovered, minutes before a seminar at a major trade show, that we needed to swap files between our PowerBooks in order to make a presentation. But neither of us had networking cables, SCSI adapters, or Internet access. We'd left our floppy drives and portable Zip drives at home.

Then we remembered the humble IR port. Moments later we were zapping files back and forth through thin air—and attracting a crowd. Apple's infrared technology not only solved our little dilemma but made passersby stop dead in their tracks. "My PowerBook can do that?" several of them asked in disbelief.

Yes, it can. IR ports are built into every PowerBook model released over the last four years, including the latest, bronze-keyboard, 400MHz PowerBook G3 (the port is a tiny, dark-plastic window on the back panel). The first-generation iMacs also have an IR port. So, although it's true that Apple is phasing out infrared ports and introducing farmore-powerful wireless technology with the AirPort, current PowerBook users may already have free, elegant wireless technology right in their hands. Get familiar with it, and in a pinch, you can



transfer files to another machine or connect to a network without plugging in a single cord. (Also, if you own a PalmPilot organizer, you can use that old infrared port to HotSync the PalmPilot with your PowerBook, without messing with serial cables or a docking station—see the sidebar "HotSync with No Strings Attached.")

Going Wireless

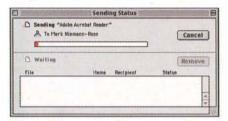
Even if you have an IR-port-equipped Mac, you won't be able to use the port if you don't have the appropriate system components installed and active. The IrDALib and IrLanScannerPPC system extensions should already be installed

(they're a standard part of every modern PowerBook software installation).

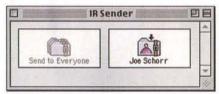
Before making a wireless connection, you might need to choose an infrared-based protocol—either IRTalk or IrDA—in the Infrared control panel. Older PowerBooks don't have an Infrared control panel because they support only IRTalk, an Apple-only technology, whereas the newer models support IRTalk and IrDA, an industry-standard protocol. (The IR-equipped iMacs support only IrDA.) For the quickest hasslefree PowerBook connections, choose IRTalk. Next, open the AppleTalk concentinues

trol panel and choose Infrared Port in the Connect Via pop-up menu.

Now you're almost ready to start beaming files. Launch Apple IR File Exchange, which comes installed on every Mac that has an infrared port. (You'll find it in the Apple IR File Exchange folder inside the Apple Extras folder on your hard disk.) The IR Sender window will open and display the message "Nobody in Range." Point another PowerBook's IR port at your port, and



Files en Route When files are being beamed from one Mac to another, Apple IR File Exchange lets you monitor their progress in the Sending Status window.



Ready to Send With Apple IR File Exchange, you can skip dealing with the Chooser, passwords, file sharing, and user privileges. As soon as an IR-equipped Mac is in range, a representative drop-folder icon, into which you can transfer files, pops into view. Use the Send To Everyone icon to send files to multiple Macs.

moments later, an icon representing the other machine will appear in the window. To transfer a file, just drop it on the drop-folder icon in the window. Received files automatically show up in the IR Receiver folder inside the Apple IR File Exchange folder.

Infrared connections aren't terribly forgiving when it comes to placement of the IR ports. Unlike the IR communication between, say, your VCR and remote control, a Mac-to-Mac infrared connection requires careful placement of equipment. Place the two PowerBooks opposite each other, no more than 2 or 3 feet apart, with the IR ports directly lined up. Apple says the ports can pick up a signal within a 30-degree radius, but anything other than a straight shot between the ports is dicey. (But here's a secret that, at

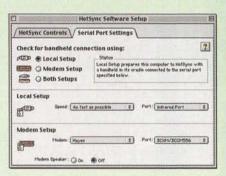
HotSync with No Strings Attached

WHAT'S COOLER than synchronizing the contacts, appointments, and notes in your PalmPilot with programs on your Macintosh? Doing it without wires. If you have an IR-equipped Mac that supports the IrDA protocol and a Palm III or a later model, you can perform a HotSync without using a cradle or a modem. All you have to do is point the PalmPilot at the infrared port.

The secret to pulling this off is to install a handful of special infrared-enabling files that aren't part of the standard Palm MacPac 2 package. If you have the MacPac 2 CD, you'll find the files in the Palm Extras folder. Otherwise, you can download the

Palm Extras folder from www.palm .com/custsupp/downloads/macpacdl .html. The files you need are in a folder called IrDA Files inside the Palm Extras folder.

Once the files are in place, launch the HotSync Manager on your Mac and change the Local Sync Port setting in the Serial Port Settings window to Infrared Port. You also have to change the preferences on your PalmPilot, as outlined in the document that accompanies the files. When you're done, you can perform wireless HotSyncs with the IR port.



Wireless Palm With the appropriate Palm Extras software on your Mac, you can configure the Hot-Sync manager for an infrared connection.

The Infrared Macs

NO NEED TO WAIT for an iBook in order to experience some of the freedom of wireless networking. If you have any of the Mac models listed below, you've already got everything you need in order to make infrared connections.

PowerBook 190 PowerBook 1400 PowerBook 5300 PowerBook 2400 PowerBook 3400 PowerBook G3 PowerBook G3 series Original Bondi blue iMac

the very least, will amaze your friends and prove that you're a true wirelessnetworking pro: you can make your IR connection turn corners simply by diverting the signal with a pocket mirror.)

IR Networking

Apple IR File Exchange is fine for simple file copying, but you can also use an infrared connection for standard Apple-Talk point-to-point networking. After setting the Infrared and Apple-Talk control panels and putting the PowerBooks into range of each other, just open the Chooser and click on the Apple-Talk icon. You should be able to log onto any

PowerBook within range and mount shared volumes, just as if you were connected via LocalTalk or Ethernet.

Granted, Apple's infrared technology doesn't give you quite the freedom of an AirPort-equipped iBook. Infrared throughput, for example, maxes out at a modest 4 megabits per second. And forget about roaming through your backyard with an infrared connection. But you never know when that tiny wireless port may be just what you need to get you out of a bind. **m**

JOSEPH SCHORR is a coauthor of Macworld Mac Secrets, fifth edition (IDG Books Worldwide, 1998).



Windows® Compatible

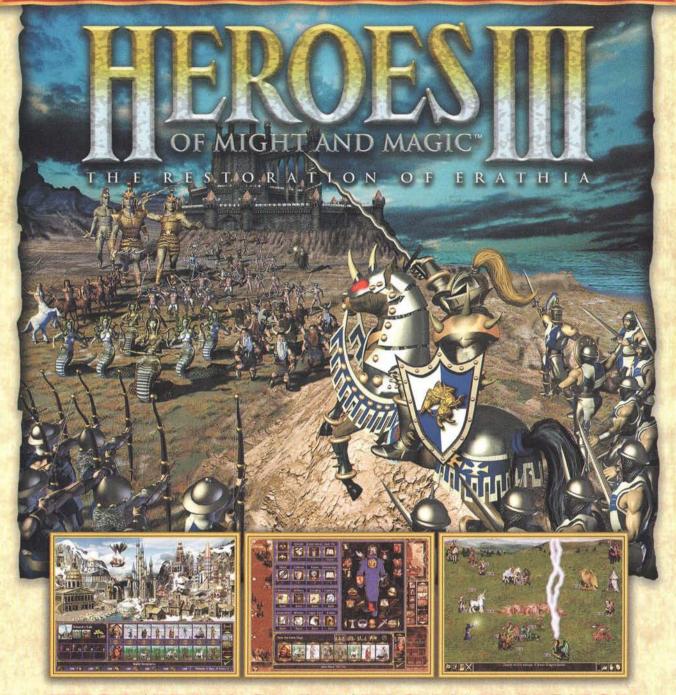


Macs, including the new iMacs, are the best personal computers on the market today. However, compatibility and interoperability between the Mac and the Windows platforms are critical in today's world. Virtual PC is a software solution that brings Windows capabilities right to your Mac! Run Windows-based business, home and educational programs. Access PC networks. Easily share files between your Mac and PC desktops. All on one computer, your Mac!

Virtual PC 3.0 is OS9 compatible and is available in three versions. You can buy Virtual PC with PC-DOS, Windows 95 or 98 pre-installed. You can also run Windows NT or Linux. Have it all on one computer and have it today! To buy or for more information, go to www.connectix.com, or call 1.800.395.1804.



The Ultimate Game for the Ultimate System!



EPIC BATTLES OF STRATEGY AND HONOR

The best is now better. Swords and sorcery, ancient magic, shrewd strategy, mass combat and fierce fighting. It's all coming to the Mac.

- Beautiful Graphics high resolution 3D rendered graphics and environments
- Huge fantasy world to explore 6 massive campaigns and over 40 single scenario maps
- Discover 8 new town types and control over 118 combat units
- Easy to use interface to get you gaming within minutes



NEW WORLD COMPUTING

3D0

www.mightandmagic.com



Secrets

Tips, Tricks, and Shortcuts

by Lon Poole

o you like to arrange window contents by their labels but dislike the way Label colors your icons? Parrish Ellison of Placerville, California, discovered that you can make a label transparent by changing its color to white. To do this, choose Preferences from the Finder's Edit menu and click the label's color swatch. This opens the Color Picker window, where you can select a new color. (To make a label transparent in Mac OS 7.6.1 and earlier, use the Labels control panel and change the color to black or gray.)

Shut Down on Time

Before starting an overnight download, I set the Energy Saver control panel of Mac OS 8.6 to shut the computer down automatically, leaving enough time for the download to finish. But when I return the next morning, the computer is always just sitting there, Internet connection dropped, but very much still on.

DAN FERGUSON Lancaster, Pennsylvania

A If your Mac connects to the Internet via modem or ISDN modem, you must make sure the Internet connection will be terminated—not merely idle—at least five minutes before the Energy Saver's automatic-shutdown time. In my tests, even an open PPP connection—never mind an open Internet program—was sufficient system activity to prevent shutdown. You must also make sure none of your programs are set to answer incoming calls to your modem, including any fax software and the Apple Remote Access (ARA) server program.

If you're sure these conditions are not causing the problem, try moving the Energy Saver Preferences file from the Preferences folder of the System Folder to the Trash. Then restart and specify a shutdown time that is at least 15 minutes after the current time. For an explanation of the 15-minute interval, see article 34505 in Apple's Tech Info Library (TIL; http://til.info.apple.com/techinfo.nsf/artnum/n34505). For a detailed description of Energy Saver's four-stage automated-shutdown process, see TIL

WAY MAN

Energy Saver control panel and reinstalling it from the Macintosh Operating System installation CD-ROM.

Big Slide Show

I'm trying to put together a slide show. Do you have any advice on which programs to use? I've scanned photos and put them into ClarisWorks (using its

Slide Show command), which works OK, but the file is so huge I can't add any more pictures.

MIKE HAWKER San Diego, California

A Instead of a program that stores a complete copy of each image in a slide show, choose a program that stores references to separate image files. I like iView Multimedia, \$25 shareware from Script Software (www.scriptsoftware .com). With it, you can easily rearrange slides by dragging their thumbnail views and quickly rotate individual slides that were scanned sideways.

article 22051 (http://til.info.apple.com/techinfo.nsf/artnum/n22051).

If the computer *still* won't shut down automatically, some third-party start-up software may be responsible. Try selecting the Mac OS 8.6 All set in the Extensions Manager control panel, restarting, and testing automatic shutdown again. If the problem disappears, then at least one extension is the culprit and you can isolate it by trial and error, using Extensions Manager or the Conflict Test feature of Conflict Catcher, \$79.95 from Casady & Greene (www.casadyg.com).

If all else fails, try removing the

High-Speed Security

I recently had a high-speed digital subscriber line (DSL) Internet connection installed. Now that I have a static IP address, do I need a firewall, and if so, where can I get the software?

JIM HALL Folsom, California

A. By far, the greatest risk to any Mac from the Internet—regardless of its connection time or IP configuration—is from applications and extensions contain-continues

ing viruses or Trojan horses. A good rule of thumb is to always be suspicious of unknown software you receive as an e-mail attachment, find on untrustworthy Web or FTP sites, or receive as a Java applet or ActiveX item embedded in an unfamiliar Web page.

A computer is also at some risk from attacks by Internet hackers who use probing software to locate vulnerable systems. A full-time connection and a static IP address can heighten your vulnerability to these hackers by making your computer available to them 24 hours a day. However, Macs running OS 9 or earlier with default settings aren't nearly as vulnerable to these attacks as Unix workstations.

It's a different story if your Macintosh provides services over the Internet. If you activate Web Sharing in Mac Operating System 8 or 9, or decide to use TCP/IP for file sharing or program linking in Mac OS 9, be sure to leave guest access disabled and give your registered users tough passwords.

Firewall software offers additional protection against hackers. With Door-Stop (\$299) or DoorStop Personal Edition (\$59), from Open Door Networks (www.opendoor.com), you can block all access from the Internet or set up filters to control access to your computer for specific TCP services and IP addresses. DoorStop can also log all attempts to access your computer from the Internet so you know how often your IP address is being probed.

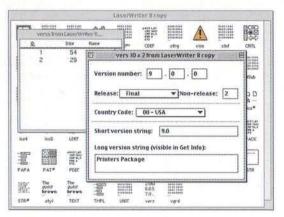
For those who share an Internet connection on a local network, most software packages include a firewall that blocks unsolicited access to computers on local networks. Vicomsoft (www .vicomsoft.com) has several products of this type, including SurfDoubler (\$54), SoftRouter Plus (\$149 and up), and Internet Gateway (\$215 and up). IPNetRouter, \$89 from Sustainable SoftWorks (www.sustworks.com), is another.

Custom Packages for Extensions Manager

The Extensions Manager control panel in Mac OS 7.6 and later can list and sort items by package, but items may end up in the wrong package or no package at all. I found that Apple's free ResEdit utility (http://asu.info.apple.com) can put stray items into

the proper packages and even create new packages. For instance, I created my own Printers package.

To change an extension's package, make a copy of the extension and then use ResEdit to open the original version from your Extensions folder. Double-click the vers icon, and open the resource with ID 2. Enter the package name as shown in "Repackaging Extensions." If there is no vers resource with ID 2, you will have



Repackaging Extensions Change the package name of an Extensions Manager item by using ResEdit to open the item's vers resource ID 2 and entering the new name in the space labeled "Long version string (visible in Get Info)." Specify the package name exactly, capitals and all.

to create one by choosing Create New Resource from the Resource menu or by duplicating vers resource ID 1. This creates a new resource, generally with ID 128, which you can change to 2 by choosing Get Resource Info from the Resource menu. Then enter the package name as shown in "Repackaging Extensions."

Once you have changed the package name, close all ResEdit windows and save the changes. You can delete the duplicate version of the extension once you are sure everything is running smoothly.

RYAN SQUIRES Richland, Washington

Cable-Modem Security Revisited

Although some cable-modem users can access shared files and printers from their neighbors' Macs (as reported in October 1999's *Quick Tips*), Jim Williams of Lombard, Illinois; Nathan Tennies of Charlotte, North Carolina; and Jay Rolls of Menlo Park, California—all of whom work for cable-modem service providers—insist that the majority of

cable-modem users don't experience this security breach.

Most cable modems can transmit only network traffic that uses the Internet's IP protocol, filtering out the Apple-Talk protocol used by default for file sharing, printer sharing, and program linking. If you see your neighbors' computers or printers in your Chooser, you are using a cable modem that can transmit protocols other than IP and you

> should ask your cable-modem service provider to configure your cable modem to filter out Apple Talk traffic.

> You can also rest assured that other cable-modem users can't snoop through your cable modem's transmissions as if you were all on the same local network. They can't intercept your sent packets, because all cable modems send on one channel and receive on another. They can't receive packets intended for you, because only your cable modem is configured to pass packets bearing your IP address. For additional protection, cable-modem traffic is encrypted on its way

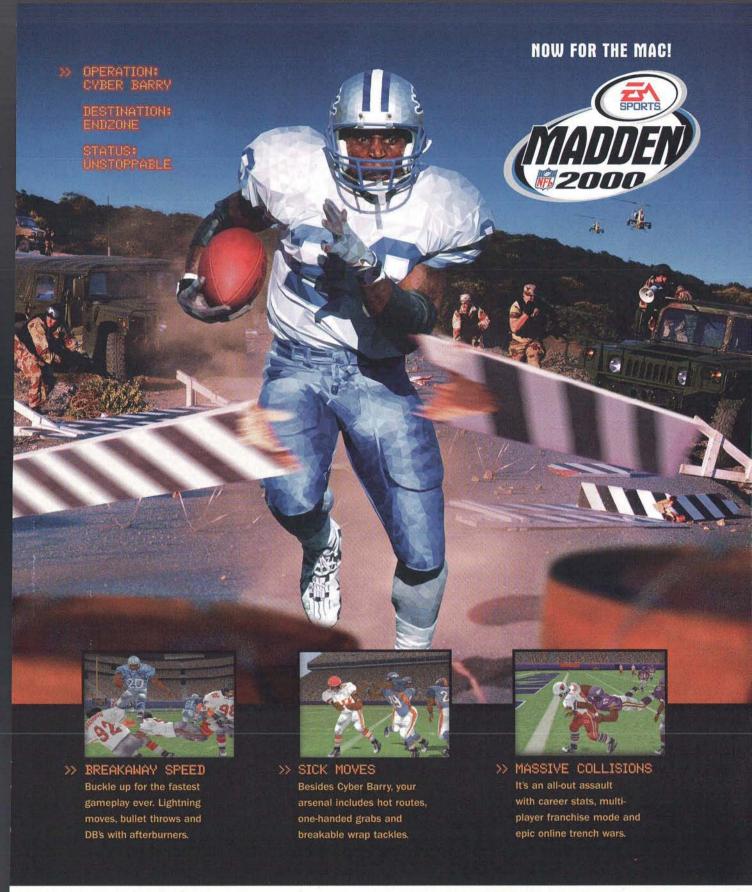
to and from your service provider.

Of course, none of these safeguards protect cable-modem users from the general risks associated with having an Internet connection or from the risks of using TCP/IP for file sharing or program linking, as discussed in "High-Speed Security," above. **m**

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. He is a coauthor, with John Rizzo, of *The Little Network Book* (Peachpit Press, 1999).

All shareware and freeware mentioned in Quick Tips is available from the Macworld Online software library (www.macdownload.com).

We pay \$25 to \$100 for tips selected for publication that discuss how to use Macs, peripherals, or software. Please include your full name and address so that we can send you your payment. Send questions or tips to quicktips@macworld.com or to Macworld Quick Tips, 301 Howard St., 16th Fl., San Francisco, CA 94105. All published submissions become the sole property of Macworld. Due to the high volume of mail received, we cannot provide personal responses.



















©1999 Electronic Arts. John Madden Football. EA SPORTS, the EA SPORTS logo, and "Illit's in the game, it's in the game" are trademarks or registered trademarks of Electronic Arts in the U.S. and/or other countries. All rights reserved. Officially Licensed Product of PLAYERS INC. @1999 PLAYERS INC. The PLAYERS INC. Ogo is a registered trademark of the NFL Players. www.nliplayers.com @1999 NFLP. Team names and logos are trademarks of the teams indicated. All other (NFL-related marks) are trademarks of the National Football League. The ratings icon is a trademark of the Interactive Digital Software Association. The Westlake Interactive logo is a trademark of Westlake Interactive logo is a trademark of Appyr Media logo is a trademark are the property of their respective owners.



Canhead, created with MetaCreations Painter™ by artist Ryan Wood ©1999

Make art not war

MetaCreations Painter™ 6 is the best version yet of the ultimate painting tool for graphic designers and fine artists alike. Painter 6 uses an extensive array of brushes, textures, canvas choices, and art materials to faithfully capture and extend the

subtleties of your style for high-quality output to print and the Web. With its next-generation brush engine, industry-standard layers, natural workflow and superior performance, Painter 6 allows you to push the limits of your imagination.



THE ULTIMATE PAINTING TOOL

Visit our online tutorial to see how this image was created www.metacreations.com/canhead



Bryce[®]

Carrara[™]

KPT"



Poser*

Canoma[™]

Create

Setting Type with InDesign

WITH THIS NEW DESIGN PROGRAM, DESKTOP TYPESETTING JUST GOT BETTER

by Olav Martin Kvern

espite its radical new architecture and the claims of advertising materials, Adobe InDesign is an evolutionary—not a revolutionary—advance in desktop publishing. But there is one area where its refinements represent a significant breakthrough: typography. I'm an old typesetting hand, and InDesign has features I only dreamed of seeing in a desktoppublishing program until now. InDesign is easily the best desktop-typesetting program available, and its release raises the bar on the competition.

Multi-line Composer

The jewel in this publishing program's crown is Adobe Multi-line Composer. Anyone who's serious about type knows that a large part of typesetting time is spent "walking the lines"-fixing bad line breaks and poor word spacing and letterspacing. These problems occur because every desktop-publishing program other than InDesign uses a singleline composer to compose lines of text. As such programs arrange characters on a line, they're considering only the spacing of that line. This means that the next line might have dramatically different spacing-and wide spacing variation between lines can make text hard to read as well as unappealing to look at.

InDesign's Multi-line Composer can examine up to 30 lines past the current line and evaluate up to 30 different ways of composing the text. It creates a list of possible break points in the lines it examines. It then ranks the different break points, considering the effect of each on spacing and hyphenation. Finally, it chooses the best alternative.

You'd think that this would take a lot of time, but when you use InDesign's default settings (6 lines ahead and 6 comABCDEFGHIKLMN STVUWXYZ ARCE The main purpose DAter noster of letters is the prac-Clificetur tical one of making thoughts regnum tuu visible. Letters in combination in cœlo, ita may be satisfying and in a we strum quoi composed page, even beautiful._ AABCI Desetting consists of arranging the letters, distributing PAter noster qui space and controlling the type so cetur nomen tuum. the reader's comprehension of tuum: fiat voluntas tua, ficut the text. etiam in terra. Panem nostru mum da mahis hadie. Et vemi

position alternatives), you get composition speed equal to that of a single-line composition system *and* better-looking text. You'll still have to spend some time looking at spacing and line breaks, but it will be only a fraction of the time you have to spend with the text produced by the single-line composition system of any other program. For a closer look at Multi-line Composer, see "Tips for Using In-Design's Multi-line Composer."

New Kerning Methods

InDesign offers two automatic kerning methods, metric and optical (you'll find them on the Kerning pop-up menu in the Character palette). When you choose metric, InDesign reads the kerning pairs defined in the screen font and applies them to the selected characters. The problem with this method is that

most fonts have very limited sets of automatic kerning pairs—few fonts contain more than 128 defined pairs, barely enough pairs to cover the most-common letter combinations.

InDesign's edge is its optical kerning method—an option that is lacking in QuarkXPress and is slow and awkward in Adobe PageMaker. When you choose optical kerning, InDesign analyzes the shapes of the characters themselves and applies kerning to evenly space the characters (see "Optical Kerning"). After that, you can range-kern the text to produce looser or tighter spacing. Optical kerning, like multiline composition, sounds as though it would slow composition to a crawl, but it doesn't. I use optical kerning without noticeable effects on speed. Older Macs may suffer a slowdown.

continues

Tips for Using InDesign's Multi-line Composer

he most powerful feature in Adobe InDesign for improving the look of your text is Multi-line Composer. The proof is in the spacing. These examples use identical spacing settings, but InDesign's Multi-line Composer reduces variation in word spacing and letterspacing between adjacent lines.

'Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a storm filled the air. At last my father appeared, borne on a meteor whose terrible effulgence flashed fire upon the world. 'Stay, wretched creature,' said he, 'and behold the innocent victim that hath fallen a sacrifice to thy barbarous envy!'

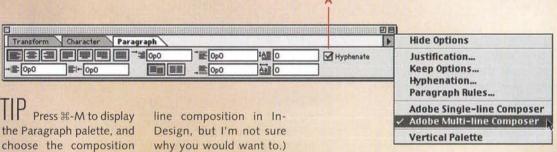
I looked, and, oh, horror! I had smothered the marvellous, the greatly loved bird."

Single-line composition

"Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a storm filled the air. At last my father appeared, borne on a meteor whose terrible effulgence flashed fire upon the world. 'Stay, wretched creature,' said he, 'and behold the innocent victim that hath fallen a sacrifice to thy barbarous envy!'

I looked, and, oh, horror! I had smothered the marvellous, the greatly loved bird."

Multiline composition



the Paragraph palette, and choose the composition system you want to use. Multi-line Composer is the default composition system. (You can use single-

Design, but I'm not sure why you would want to.) To turn hyphenation on or off, click on the Hyphenate check box (A).

Hang It All

The edges of a text column can sometimes look ragged—even in fully justified text—because of the shape of the characters beginning or ending the lines of text in the column. Some desktop-publishing applications have a feature called "hanging punctuation," which attempts to make the edges of text columns appear

more regular by placing a limited set of punctuation marks outside the column.

InDesign's Optical Margin Alignment goes further to improve the look of a text column. It adjusts *all* characters at the beginning or end of lines in a text column (see "Optical Margin Alignment"). It looks odd on the screen, but on printed pages, you'll see a subtle

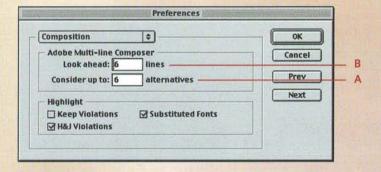
improvement over the results that other publishing programs produce.

Character Styles with a Difference

Like QuarkXPress, InDesign offers character styles—styles that can be applied to a range of text smaller than an entire paragraph (if you want the formatting to apply to the whole paragraph, use a para-

The options in the Composition panel of the Preferences dialog box control Multi-line Composer settings. You can enter a number from 3 to 30 in either field. Don't change these settings unless composition seems unusually slow. In such a case, try decreasing the value in the Consider Up

To *n* Alternatives field (A), although the problem is probably due to some other factor. If you're working with paragraphs longer than seven composed lines, you can increase the value in the Look Ahead *n* Lines field (B). You want Multiline Composer to be able to evaluate every line in a paragraph.



To have InDesign highlight lines that violate your spacing settings (the values you entered in the Justification dialog box), turn on the H&J Violations option in the Highlight section of the Composition

panel of the Preferences dialog box. InDesign uses three shades of yellow to indicate violations—a light shade indicates a minor variation from your spacing settings; darker shades indicate greater variation.

Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a storm filled the air. At last my father appeared, borne on a meteor whose terrible effulgence flashed fire upon the world. 'Stay, wretched

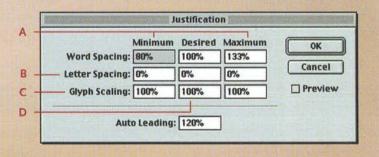
Whether you want to use multiline or single-line composition, you'll need to provide the spacing settings you want applied to your text, in the Justification dialog box (choose Justification in the Paragraph palette). The values you enter in the Minimum and Maximum fields (A) set the ranges you'll allow InDesign to use when composing justified copy.

If you enter 0% in all three Letter Spacing fields (B), InDesign will never apply letterspacing to the selected text (as XPress will). Instead, it will make spacing adjustments by using word spacing. This approach makes sense,

because even a minuscule amount of letterspacing can make your text more difficult to read, but it means you'll have to watch for overly loose or tight word spacing.

Watch out! Entering a value other than 100% in any of the Glyph Scaling fields (C) tells InDesign that it's OK to stretch and squash the characters in a line. This can make for interesting special effects, but you shouldn't use it for everyday text composition—varying character shapes in body text makes the text difficult to read.

The value you enter in the Desired fields (D) sets the spacing for nonjustified text.



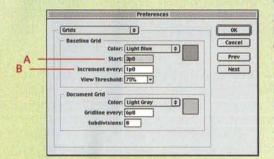
graph style). And, as in QuarkXPress, the easiest way to create a character style is to select a range of text that has the formatting you want and then base your new character style on the selected example. In QuarkXPress, this results in a style that has all the formatting attributes of the selected text. InDesign, however, records as part of the character style only

the formatting attributes that differ from the default formatting of the surrounding text. This is a feature—it's not a bug that lets you create character styles that affect only the font and color, say, while leaving all other attributes unchanged.

If you want your InDesign character styles to work like character styles in QuarkXPress, you could walk through all the panels of the Edit Character Style dialog box to fill in the missing formatting information. But there's an easier way—the Adobe Technical Information folder on your InDesign installation CD contains a Scripting folder, where you'll find a script named Create Character Style. When you define a character style continues

Take Advantage of Grids and Guides

You will find the settings that control the leading grid in the Grid and Guides Preferences dialog box (choose File: Preferences: Grid and



Guides to display this dialog box). You can control where InDesign begins marking off the leading grid by using the Start field (A). Set the distance between grid lines in the Increment

Every field (B). For a page layout using a leading grid, set this value to the leading of the publication's body text or some even multiple thereof.

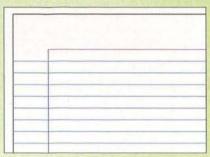
To "snap" the baselines of text in a paragraph to the underlying leading grid, select the paragraph and turn on the Align to Baseline Grid option in the Paragraph palette. InDesign moves the baselines of the selected paragraph to match the leading grid, which does not have to be visible.

"Sca	rcely l	nad I p	pronoi	inced t	hese '	words
whe	n a t	hick, l	olack (cloud o	cast it	s veil
ove	r the	firmai	ment,	and di	imme	d the
bril	liancy	about	us; ai	nd the	hiss o	f rain
and	grow	ling o	f a ste	orm fil	led th	ne air.
ransform	n V Chara	ctor V Pa	ragraph			
			→# Op0	*E0	pt	FAN O
E 000	書 -	000	等制	題 建	pt	ANI O

Align to Baseline Grid off

"Sca	rcely l	had I p	ronou	nced	these	words
who	en a t	hick, l	olack c	loud	cast	its veil
ove	r the	firmai	nent,	and d	limn	ned the
bril	liancy	about	us; ar	d the	hiss	of rain
and	grow	ling o	f a sto	rm f	lled	the air.
Transfor	m Chara	cter Par	ragraph			
自	2		"#I 0p0	- 産	0 pt	AN O
	mar. S	4.4	100-1 E	100	O pt	2240

Align to Baseline Grid on

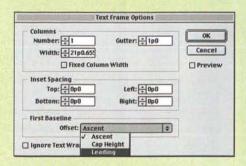


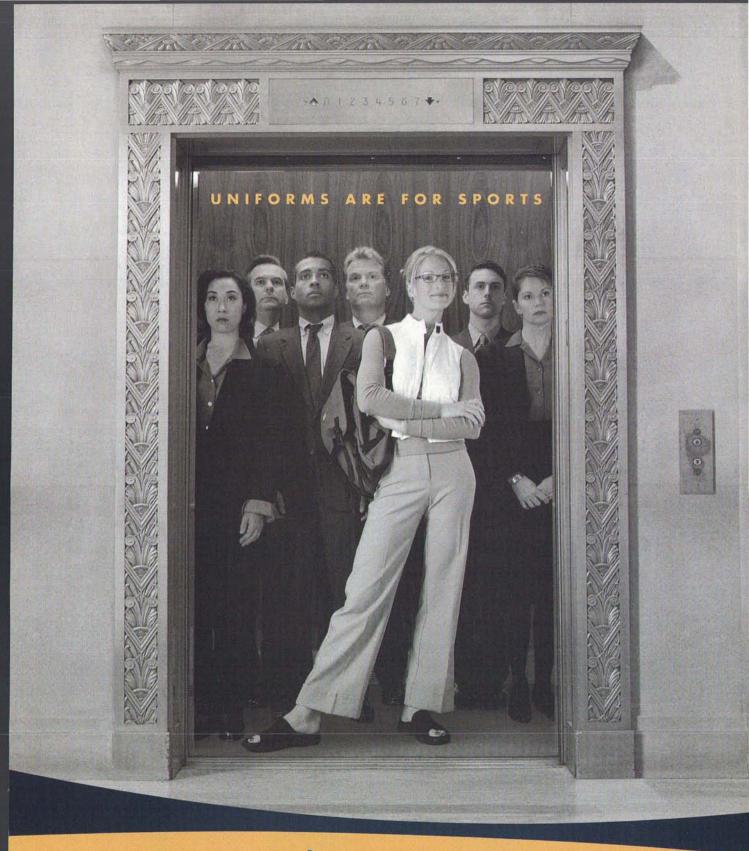
Choose View: Leading Grid to display the publication's leading grid. If the grid does not appear, it's because your current magnification is lower than the leading grid's view threshold. Zoom in or change the view-threshold value. When you turn on the Snap to Guides option (on the View menu), InDesign snaps objects to the leading grid as you draw or drag them.

To control the location of the first baseline of text in a text frame, select the text frame and press #-B to

display the Text
Frame Options
dialog box. Then
choose Leading
from the Offset
menu in the First
Baseline section.
When you do
this, the first
baseline appears
one leading increment from the

top of the text frame regardless of the size of the characters in the line.





creativepro

Asset Management Design & Layout Fonts & Typography Illustration Imaging Motion Prepress & Printing Stock Photography Systems & Hardware Web Publishing where creative business clicks. www.creativepro.com/mw

Creativepro.com Inc. 1.800.796.9798, 503.274.2020, Fax: 503.274.0530. © 1999 Creativepro.com. All rights reserved. Creativepro.com and the Creativepro.com logo are trademarks of Creativepro.com Inc. CPMWNA011199

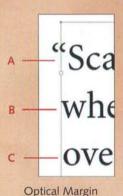
Optical Kerning

The text above shows the metric method of automatic kerning; the more evenly spaced text below was produced with the optical method. The red numbers show the automatic kerning adjustments in thousandths of an em.



Optical Margin Alignment

In the text sample at the upper right, Optical Margin Alignment is off; in the sample below it, Optical Margin Alignment is on. In the closeup view, you can see how InDesign adjusts the characters at the edge of the text column. Punctuation (A) is placed outside the column, and some characters (B) hang outside it, whereas others (C) are located farther inside the column.



Optical Margin Alignment close-up "Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a story last my father ap Optical Margin Alignment - 国 → 11 pt | ▼ meteor whose terri

Optical Margin Alignment off

Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a s story last my father ap Optical Margin Alignment △≣I → 11 pt meteor whose terri

Optical Margin Alignment on

with this script, it will record all the formatting attributes of the selected text, à la QuarkXPress.

InDesign's Leading Grids

A leading grid is a grid based on the leading of your publication's body text. It's a very powerful design tool, because it can give structure to a layout. Leading grids make production decisions easier-no more worrying about how and where to fit images or text-and prevent leading creep (a typographic gaffe in which the baselines of body text in adjacent columns don't line up). Readers can perceive the underlying structure imposed by a leading grid even when the grid is not immediately obvious. Leading-grid-based layouts "feel" more solid and consistent than designs that are not based on a grid. PageMaker and QuarkXPress both include tools for "snapping" the baselines of text to a leading grid, and InDesign follows suit in providing these essential features. For details on working with leading grids, see "Take Advantage of Grids and Guides."

Inching toward Perfection

InDesign has room for improvement. There are lots of typesetting features I'd like to see in it, and parts of the program aren't up to the standard of its type controls. But with its excellent manual control and intelligent automation, Adobe's new entry makes it easier to set good type. m

OLAV MARTIN KVERN is an illustrator, graphic designer, software developer, and writer. He is the author of Real World FreeHand 8 (Peachpit Press, 1998).



No Mac Is An Island.

Think Asanté—Networks For The Mind

At Asanté Technologies, we know Mac. We know you eat, sleep, and breathe Mac. And we know you're not alone. So we've made it simple for you to network all your Macs with other computers.

Whether you need to connect your new iMac to your G₄, wire a LAN for the Graphics Department, or establish an Enterprise WAN, we have the networking solution for you. The choices are many. The answer is simple. Asanté—speed, simplicity, and savings.



iMac Connectivity.

AsantéTalk™ is the easiest way to connect your Apple iMac or any Ethernet Mac for printing and file sharing. Simply plug in your

Ethernet on one side and LocalTalk on the other to get up and running in no time.



PowerBook Connectivity.

Don't hit the road without a FriendlyNet IO/100 CardBus Adapter for your Powerbook. It's high performance mobile connectivity at an affordable price. And just like a Mac, its plug-and-play design makes integration easy.





Gigabit. With our new Gigabit solutions, your entire office can soon be

performing at Gigabit speed. Our FriendlyNET™ 7000 series of affordable, easy to install Gigabit switches and cross-platform GigaNIC™ PCI adapters ensure that no one will be waiting on the network.

Low-Cost 10/100 Networks. Asanté's

FriendlyNET™ dual-speed hubs and switches put the power of 10/100 computing into the palm of your hand. Access network resources at up to 100Mbps with these compact yet cost-effective,

plug-and-play networking solutions that fit on your desk and within your budget.



Act Now and Save. For a limited time only, Asanté is offering special rebates on select products for your home or office. Please visit our website for more information about how you can save.



For complete details on the entire line of Asanté networking solutions call 1-800-662-9686.

* Ry Stitch Scanning Technology Technology Smartset Powerful Smartset Feature Application Feature

Affordable Quality

Eversmart Jazz

scanners incorporate unique,
that assure the highest
that aschieve
tools make it EASY to achieve
tools make i

For further information call 1-800-685-9462 or visit www.scitex.com

Copyright 1999 Scitex Corporation Ltd. All rights reserved. Scitex, the Scitex logo, EverSmart and EverSmart Jazz are trademarks of Scitex Corporation Ltd. or its wholly owned subsidiaries and may be registered in certain jurisdictions. Specifications are subject to change without notice.

SCITEX PRESENTS: **AMAZING SCANNING** Starting from \$12,950

scitex

Create

Low-Fat Graphics for the Web

USE PHOTOSHOP 5.5 TO MAKE YOUR GRAPHICS LITHE AND YOUR WEB PAGES FAST

by Mike Wooldridge

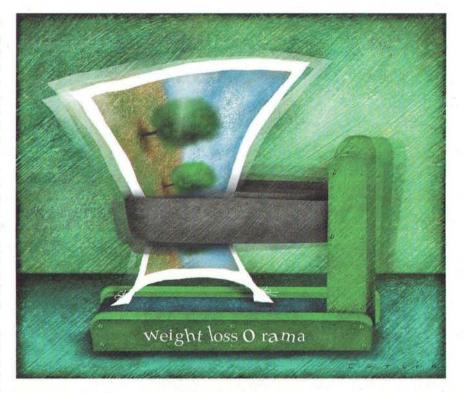
ramming too many bloated images into a Web page has always been one of the surest ways to scare away visitors. Images that have been saved in the wrong format or compressed poorly can slow download speeds to a crawl. That's why a key step in Web design has always been optimizing a site's buttons, photos, and other graphics before the site goes live.

Strangely, the most popular imageediting application—Adobe Photoshop was historically less than ideal when it came to optimizing images for the Web. Because it lacked an efficient interface for tweaking and comparing compressed images, designers had to either install special plug-ins or defect to newer imaging applications, such as Macromedia Fireworks and Adobe ImageReady, that were built for Web design.

With Photoshop 5.5, Adobe has addressed many of the Web-related shortcomings of its flagship product. A new Save For Web option lets you easily preview, apply, and save optimization strategies for the main Web image formats: JPEG, GIF, and PNG. And because Adobe now bundles Photoshop with ImageReady 2.0, you no longer need to buy two applications to get highend imaging power and handy Web development options. (See the sidebar "Optimization on Autopilot" for a tip on using ImageReady.) Armed with some basic knowledge about how image compression works, even Photoshop beginners should be well prepared to create image-rich sites that download quickly.

Compression 101

Image-compression formats take advantage of the fact that describing an image with mathematical formulas can be much more efficient than describing it one



pixel at a time. It's analogous to defining an image of a green square as "a 10-by-10 grid of green pixels" as opposed to defining it as "one green pixel, then another green pixel, then another green pixel, then another green pixel, and so on. Compression schemes often decrease the amount of space required to store an image by 90 percent or more. (For a file-size comparison of the different imaging formats, see the sidebar "Which Format? Compression Basics.")

Different types of image compression use different formulas to compress information, and each has its advantages and disadvantages. Luckily, you don't have to be a mathematician to choose the best compression format for your Webpage images.

If your image is a photograph, you'll

want to save it as a JPEG file-because the JPEG format can support millions of colors in a single image, and because it excels at compressing images with continuous changes in tone. JPEG's main drawback is that it's a lossy compression format, which means you lose a little information when you save an image as a JPEG file. The loss of information shows up as small artifacts that can multiply in intensity if you repeatedly compress the image in that format. When you save an image as a JPEG, you select the amount of compression to apply. This involves deciding how many artifacts you're willing to put up with in exchange for a small file size. Photoshop's Save For Web option lets you adjust the IPEG compression and preview the compressed image side by side with the uncompressed original. (This comparison feature was previously one of the advantages of using Fireworks and ImageReady.)

If you really want to pack down your photos, Save For Web lets you add Gaussian blur to your images before saving them. JPEG works best with continuous tones, so softening a picture's edges with the blur tool can help boost compression.

The other type of image Web designers deal with regularly is illustrations with hard edges and large areas of flat color. These are best saved as GIFs (or as PNGs, which we'll discuss below). GIFs are limited to 256 colors, which is usually enough for flat-color illustrations (but not for many photos).

GIF is *lossless*, meaning it doesn't lose information during the compression process. However, a new lossy adjustment in Photoshop 5.5 allows you to

increase compression by discarding information before saving your files as GIFs. (For more on this, see the sidebar "Put Your GIFs on a Diet.")

The most important part of optimizing compression with the GIF format is decreasing the number of colors in the image as much as possible (this is one of Save For Web's options). Flat-color buttons and similar graphics can often be reduced to 32 or fewer colors and still display fine. Other Save For Web functions, which include determining how a GIF's color palette is selected and whether dithering will occur, have different (but minor) effects on file size, depending on the image.

A Peek at PNG

The Save For Web option also lets you save images as PNG (pronounced "ping") files. PNG is the least-used compression format, mainly because it's the newest,

and browser support for it has been spotty. (Microsoft Internet Explorer 4.5 for the Mac doesn't support PNG at all; Netscape Navigator 4.5 supports PNG but not all of its features.)

The PNG format's advantage is that it can support millions of colors, like JPEG, but it's also lossless, like GIF. Therefore, it often generates a higher-quality (though slightly larger in terms of file size) compressed image than GIF. Other advantages include its ability to store gamma information, which can compensate for different display brightnesses across operating systems, and partial transparency.

The PNG format should finally have full support in version 5.0 browsers, giving Web designers more reasons to consider PNG when optimizing images. **m**

MIKE WOOLDRIDGE (mike@mediacosm.com) is a writer and Web designer living in Berkeley, California.

Which Format? Compression Basics

THE THREE DIFFERENT IMAGE FORMATS AVAILABLE IN PHOTOshop 5.5's Save For Web tool compress the pixel information using different mathematical formulas, and each formula yields different results depending on the image in question. Here, for example, are the original and compressed sizes for these photographic and flatcolor images.



FLAT-COLOR ART 140 by 160 pixels TIFF, uncompressed: 39.4K JPEG, medium quality: 5.0K GIF, 16 colors: 4.3K PNG, 16 colors: 6.0K



360 by 270 pixels TIFF, uncompressed: 307.6K JPEG, medium quality: 15.6K GIF, 16 colors: 25.4K PNG, 16 colors: 29.3K

PHOTOGRAPH

The JPEG format is the clear choice for photographic images. While the JPEG format uses several mathematical techniques to save file space, the most important one is Discrete Cosine Transformation (DCT). DCT saves space by approximating the arrangement of an image's pixels and discarding the information that is least relevant to the human eye.

For compressing a flatcolor illustration, you're better off using either the GIF or the PNG format. This is because JPEG, though it may be able to shrink such an illustration to a similar file size, adds artifacts to the resulting image (this is because JPEG is a lossy compression format, meaning you lose some pixel information during the process). These artifacts will be especially noticeable in the solid-color areas of illustrations, which is why you want to use one of the lossless formats-GIF or PNG.

The GIF format compacts image information using a

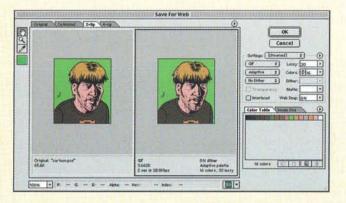
mathematical technique known as LZW compression (named for its inventors. Abraham Lempel, Jacob Ziv, and Terry Welch). LZW works by creating a dictionary of different pixel patterns that occur in an image; it then references the dictionary entries multiple times to re-create the image. This saves space because, while patterns tend to occur more than once in an image, they have to be stored only once in the dictionary. The GIF compression algorithm is patented by Unisys, which collects royalties on applications that use GIF compression.

PNG compresses information using a technique similar to GIF's LZW compression, but it's different enough not to infringe on the Unisys patent. (The fact that PNG is unpatented—as is JPEG—is one of the main reasons developers have pushed for its acceptance.) A PNG file can have millions of colors, but you'll want to use much fewer for flat art, because doing so will decrease the final file size.

Put Your GIFs on a Diet

COMBINING PHOTOSHOP'S SAVE FOR WEB TOOLS WITH A FEW tricks of the trade will help you get your image files microsized. The following steps show how you can trim extra kilobytes off your GIFs so they'll download faster.

1 started with a scan of a cartoon illustration. I brought the image into Photoshop, chose the Save For Web option, and then saved it as a 256-color GIF file. The total file size was 6.7K.



2 The most important part of reducing the size of a GIF file is to reduce the number of colors. Since the cartoon contained black lines and areas of flat color, and it had no gradients, I was able to reduce the number of colors from 256 to 16 without degrading the image. This slimmed the file down to 4.3K.



One trick to reducing the size of a GIF file is to get rid of any stray pixels in the areas of mostly solid color. I used the clone tool to get rid of some darkgreen pixels scattered in the cartoon's background. When I resaved the file, its size dropped to 3.9K.



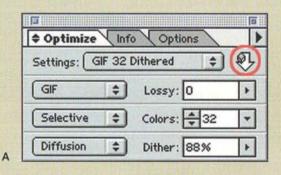
The final step was to apply the Lossy GIF feature, which is new in Photoshop 5.5. Lossy GIF takes advantage of the fact that GIF compresses better when pixel patterns repeat within an image. When you set the Save For Web Lossy GIF slider higher, Photoshop finds sequences of pixels that are similar and makes them identical. For this illustration, I set the lossy slider at 30. This reduced the file to a final size of 3.7K-45 percent smaller than the GIF file I began with.

Optimization on Autopilot

NEED TO COMPRESS A FOLDER FULL OF IMAGES, BUT YOU'RE approaching a deadline? This is when ImageReady 2.0-which is bundled with Photoshop 5.5-comes in handy. ImageReady's droplets are automatic image-optimization schemes that appear as desktop icons. Here's how to create and use a droplet from inside Photoshop.

- O Click on the wide button at the bottom of Photoshop's Tools window. This will open ImageReady. (If you have an image open in Photoshop, it will be imported into ImageReady.)
- 2 Select a compressed file format from ImageReady's Optimize window and adjust the compression settings to your liking.
- 3 Click on the droplet icon (A) in the upper-right corner of the Optimize window (the icon is the arrow pointing down). This will prompt you to name and save your new droplet. In the screen shot (B), I've saved four different schemes as droplets in a folder.
- To put your new droplet to work, drag and drop one or more image files (or folders) onto the icon. ImageReady will open, compress, and save new versions of the files.

Double-clicking on a droplet icon will bring up an ImageReady action menu that allows you to do further fine-tuning of your image-compression scheme.





Create

GRAPHICS

Embracing Imperfection

DELIBERATE MISTAKES GIVE ART A NATURAL QUALITY

by Cathy Abes

e've all seen countless digital images sporting that telltale computer-generated look: too many smooth lines, flat colors, and uniform textures. An image that's too perfect can appear bland, soulless, devoid of character.

That's exactly what artist and illustrator Jeff Neumann aims to avoid. Coming from a collage-making background, Neumann brings an experimental, less-controlled approach to illustration. He views each project as a learning experience, what he calls "a process of making mistakes." And he treasures those mistakes, because they give his pieces a

hand-done, natural appearance.

Going back and forth between Adobe Illustrator, Photoshop, and MetaCreations' Painter, Neumann builds up layered images and then destroys selected elements within those layers to simulate a rough, weathered look. He prefers to use Illustrator 6.0, because its paintbrush tool creates objects, which he can fill with gradations, whereas the same tool in later versions creates only lines.

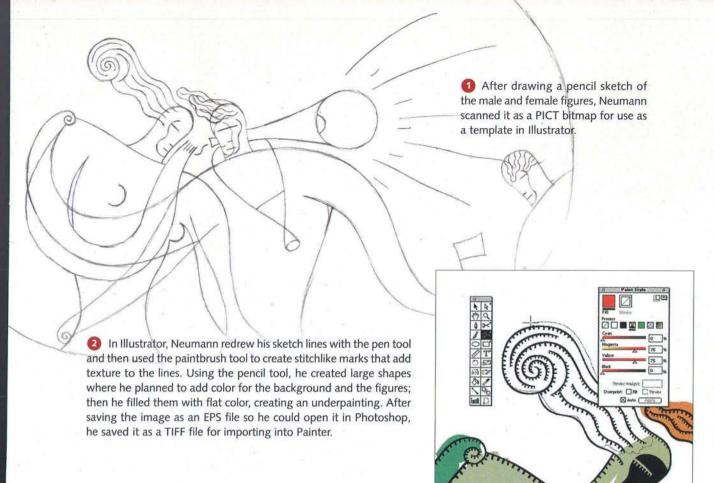
To illustrate an investigative article, for the *Anchorage Daily News*, about the illegal practice of physicians' selling their patients' confidential records to insurance companies, Neumann began with a

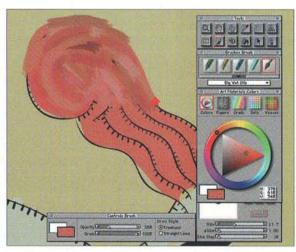
hand-drawn pencil sketch. He refined the sketch and added flat color in Illustrator, created natural-media textures in Painter, and used Photoshop to composite the various layers.

For this illustration, Neumann relied on his usual arsenal of Illustrator 6.0, Painter 3.0, and Photoshop 5.0. His hardware includes a Power Computing PowerCenter Pro 210 and a Umax Astra 1200S scanner. **m**

CATHY ABES, author of *Photosbop F/X* (Ventana Press, 1994) and recently a senior editor at *Publish*, has been writing about graphics and publishing for more than ten years.







3 After bringing the TIFF file into Painter, Neumann used variants of the oil-brush tool to add texture and depth to the flat colors. For the woman's hair, he used a wet oil brush to pick up color from the underpainting and bleed it into the color he was brushing on top. A coarse-hair brush used on the dark-teal areas of the male figure gave it a hand-painted, textured quality.

4 Next, Neumann brought the TIFF Painter file into Photoshop as a layer and brought the EPS file in on top of that. In the Hue/Saturation dialog box, he slightly shifted all the values, making them less saturated, darker, and greener. He cut away parts of the EPS layer, revealing the Painter layer below it, to create more texture and depth. Then he brought in his original pencil sketch as another layer to give the image a more hand-drawn look.

Using the magic-wand tool at a low setting (about 5) allowed him to change some of the colors in the Painter layer, to create the illusion of chipped-off paint for a weathered look. For example, he picked up about half the blue tones in the female figure and filled them with yellow.



FORSONCE REALISTS OF LOTTE S Immerse yourself in this quintessential medieval fantasy world.

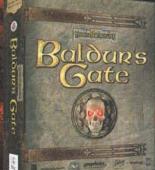
macintosh

SET IN TSR'S FORGOTTEN REALMS

The most popular and longest running of the Advanced Dungeon & Dragons roleplaying game world.

GRIPPING NON-LINÉAR ADVENTURE

Dozens of subplots that branch out from the main scenario.
Your decisions affect the entire game world as a whole.



HUGE GAME WORLD

Multi-CD set filled with nearly 10,000 scrolling game screens.

www.macbaldur.com





graphsin

GRAPHIC SIMULATIONS CORPORATION







INDEX TO ADVERTISERS

Interact with the companies whose products and services are advertised in Magworll

ADVERTISER	INTERACT PAGE	E NO.	ADVERTISER INTERACT P	AGE
BDO	www.mightandmagic.com	n 98	Interland, Inc. 800-599-0547	
			J&R Computer World 800-221-8180	
Adaptec	www.adaptec.com/mac	35		
Adaptec	www.adaptec.com/mwtoa	st 53	Kensington www.kensington.com/i	mac
AEC Software	www.aecsoft.com	10		
ALSOFT	800-257-6381	8	La Cie —	
American Power Conversion	888-289-APCC ext. 8823	65	LucasArts www.lucasarts.com	
Apple		IFC,1		
APS Technologies	800-285-0638 14	8,149	Mac Zones www.maczone.com	119
Asanté Technologies		109	MacMall/Creative Computers 800-222-2808	136
Aspyr Media	www.aspyr.com	101	Macromedia 800-457-1774	
			MacSoft www.gtstore.com	
ottom Line Distribution	800-990-5692	146	MacWarehouse 800-434-3035	128
			Maxell www.maxell.com	
Canon USA	www.powershot.com	75	Meade Instruments 800-62MEADE	
Casady & Greene	www.casadyg.com	56	MegaHaus 800-786-1184	
DW Computer Centers, Inc.	800-509-4239 14	4,145	MetaCreations Corp. 800-846-0111	
Connectix	www.connectix.com	97	MicroMat 800-829-6227	
Corel Corporation	800-722-6735	39		
Corel Corporation	800-772-6735	37	Newer Technology www.newertech.com	
creativepro.com	www.creativepro.com	107	Nikon Electronic Imaging www.nikonusa.com	
Dataviz	800-270-0030 ext. 133	48	Orange Micro 714-779-2772	
Deneba Software	800-733-6322	19		
Diehl Graphsoft	www.diehlgraphsoft.com	22	Pervasive Software www.pervasive.com/sp	ee
			PowerOn www.poweronsw.com	
Epson America	800-BUY EPSON	14,15	PowerOn www.poweronsw.com	
Scient	www.dvdchanger.com	43	Pro Direct 800-524-9952	
Formac	www.formac.com	57	Radius/ Miro 877-3RADIUS	6
Formac	www.formac.com	59	RICOH 800-63RICOH	
GCC Technologies	www.gcctech.com	6,7	Scitex 800-579-9452	
Global Village	www.globalvillage.com	41	Sonnet Technologies 800-786-6260	
Graphic Simulations	www.graphsim.com	116		
			ViewSonic 800-888-8583	
Handspring	www.handspring.com	9	VST Technologies, Inc. www.vsttech.com	
Hewlett Packard	www.hp.com/go/mac	50	Vstore.com www.vstore.com	
Hewlett Packard	www.hp.com/go/original			
Hire Knowledge	www.hireknowledge.com		Wacom Technology Corp. 800-922-2585	

PRODUCT INDEX

Looking for a specific product? Simply use *Macworld's* product index to find the page or the advertiser of the products which interest you.

Then simply log on at www.macworld.com/getinfo and receive all the product information you need.

PAGE NO.	ADVERTISER (GET-INFO	PAGE NO.	ADVERTISER GI	ET-INFO
HARD	WARF	No.	148,149	APS Technologies	62
HARD	WAKE		146	Bottom Line Distribution	98
COMPUTER	SYSTEMS		144,145	CDW Computer Centers, Inc.	2
IFC,1	Apple		151	J&R Computer World	56
136-143	MacMall / Creative Computers	131	119-127	Mac Zones	71
13	ViewSonic	_	136-143	MacMall / Creative Computers	131
21	VST TECHNOLOGIES, INC.	73	128-135	MacWarehouse	18
			147	Pro Direct	135
HARD DISK	STORAGE				
148,149	APS Technologies	62			
146	Bottom Line Distribution	98	SERVIC	ES	
55	La Cie				
85	Maxell Corporation of America	134		DUCTS/SERVICES	
147	Pro Direct	135	107	creativepro.com	14
			52	Interland, Inc	10
MISCELLANI			31	Vstore.com	133
65	American Power Conversion	72			
43	Escient				
9	Handspring		SOFTW	ADE	
BC	Kensington	1	2011 W	ARE	
54	Meade Instruments	79	BUSINESS/PROD	DUCTIVITY	
11	RICOH	4	10	AEC Software	83
29	Wacom Technology Corp.	84	48	Dataviz	142
HONETORS	CDARINGS DOADDS		22	Diehl Graphsoft	46
35	GRAPHICS BOARDS		27	Pervasive Software	40
1000	Adaptec			rervasive soreware	
57 59	Formac		EDUCATIONAL 8	TRAINING	
IBC	Formac Newer Technology	EE	56	Casady & Greene	115
12	Newer Technology Orange Micro	55 60			
60,61	Radius/ Miro	147	ENTERTAINMEN	т	
94	Sonnet Technologies	132	98	3DO	
83	XLR8 by Interex	121	101	Aspyr Media	90
13	Viewsonic	121	116	Graphic Simulations	91
13	Tichsonic		93	LucasArts	
NETWORKIN	NG PRODUCTS		62	MacSoft	29
109	Asanté Technologies				
41	Global Village	106	GRAPHICS/DTP		
			37	Corel Corporation	78
PRINTERS			39	Corel Corporation	124
14,15	Epson America	61	19	Deneba Software	57
6,7	GCC Technologies	43	45	Macromedia	36
2,3	Hewlett Packard	-	102	MetaCreations Corp.	5
50	Hewlett Packard	125	NAMES OF TAXABLE PARTY.		
11	RICOH	4	MULTIMEDIA	Will E	
Rest Bregili	UK Library revenience		53	Adaptec	-
	DIGITAL CAMERAS		45	Macromedia	36
75	Canon USA	23	UTILITIES		
18	Nikon Electronic Imaging	59	De services	ALSOFT	140
12111			8 97	ALSOFT Connectix	140 105
MAIL	ORDER		47	Infowave Software, Inc.	32
MAIL	OKDEK		24	MicroMat	67
150	MegaHaus	170	49	PowerOn	118
155	meganaas	170	3.0	TOWEROIL	

macZone's

the next generation of





Mac OS 9 is packed with



Upgrade your Mac to the world's most powerful Internet computer!

Mac OS 9 makes your Mac more powerful, more Internet-friendly and more fun to use than ever before. Sherlock 2 is the most powerful and fun way to find any information on the Internet. With Multiple-User Login, you can share your Macintosh with your family or classmates. Mac OS 9 will remember all your personal Internet settings like your e-mail and favorite sites, along with all your desktop and applications preferences too! Packed with more than 50 new features, including these:

Sherlock 2 Find and do more on the Web faster and

Multiple-User Log-in Now you can

share your Mac AND keep all your Internet, desktop and application preferences the way you left them!

Voiceprint Password

Access all your e-mail, Web, and file server accounts with your voice!



Keychain

Keeps track of all your user IDs and passwords so you don't have to!

Encryption

Keep your private info private with industrialstrength encryption!

Get Mac 089



Auto Updating

Sherlock 2 automatically downloads software upgrades from the Internet, and even installs them for you!



now works over the Internet! Share files, folders and data with anyone you wish!

Network Browser

Find Internet file servers, FTP servers and Web servers as easily as you find printers on your network!

AppleScript over TCP/IP

Remotely control your Mac (or a whole battery of them) from wherever you are!



\$69.98*

easier than ever!

#111431 Mac OS 9
*After \$20 Apple mail-in rebate for owners of OS 8.5/8.6. Low Zone price \$89.98.



G3 Upgrade/Mac OS 9 Bundle FREE "After \$20 Apple mail-in rebate for owners of OS 8.5/8.6. Low Zone price \$569.97.

*Compatible with Power Mac 7300, 7500, 7600, 8500, 8600, 9500, 9600; PowerComputing Power Tower, PowerTower Pro. PowerCenter, PowerCentar Pro. PowerWava, Power Curve UMAX J700, S900 series; Daystar Genesis MP series

Get Great USE Connectivity! ONLY I Entrega 7-port hub & 5m USB Cable MacOS9 Networking Bundle

latch vour iMac! with a USB scanner from Artec

Get Mac 089 ONLY

Scanner Bundle

Order Online Today

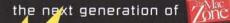
Corporate bids welcome! Fax to 1-800-684-8080

A NASDAQ® COMPANY Ticker Symbol: MZON

Source Code MW001

Order by Phone 1.800.436.0606

macZone



Graphite





Apple® iMac™ **Special Edition**

400MHz G3 Processor

128MB SDRAM

13.0GB Hard Drive

4x max. var. speed, slot Loading

DVD Drive

2 FireWire Ports Running at 400 Mbps!

2 USB Ports

iMovie lets you capture. edit and create vour own digital movies in minutes!

Supports Airport** ... and more!



Apple iMovie

- **Create memorable** home movies
- Add short video clips to your web site
- Send a video greeting
- Be the star of your own music video
- Deliver powerful presentations that bring your message to life
- Capture, edit and create all your video projects with easy-to-use visual controls

*iMouse available on SE & DV models



iMac

Special Edition

Available in Graphite

Harman Kardon Odyssey Sound System

Included with each of Apple's newest iMacs!

**Requires Airport Card



10.0GB Hard Drive

DVD Drive Slot Loading

2 FireWire Ports Running at 400 Mbps!

2 USB Ports

Supports AirPort" iMovie lets you capture, edit and create your own digital movies in minutes!

Strawberry #112620 Lime #112621

Grape #112619 Blueberry #112622

Tangerine #112618

**Requires Airport Card

New Low Price! Apple® iMac

333MHz G3 Processor

32MB SDRAM

6.0GB Hard Drive

24x Max. var. speed **CD** Drive

56K Modem

USB Ports Dual 12 Mbps

Strawberry #102986

#102989 Lime Tangerine #102988

#102987 Grape

Blueberry #102985

New

Blueberry

Color!

New 350MHz! Apple® iMac™

350MHz G3 Processor

64MB SDRAM

6.0GB Hard Drive

Supports AirPort 24x Max. var. speed

ONLY 0.98

CD Drive Slot Loading

Stereo Speakers Harman Kardon 56K Modem, USB Ports Dual 12 Mbps

**Requires Airport Card





Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery, Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. "1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple," the Apple logo, Macintosh* and PowerBook* are registered trademarks of the Apple Computer, Inc.

\$200 Instant Rebate! on Select computers

\$25 Mac Zone Gift Certificate! with CPU purchase

And SAVE \$125 on ANY Purchase

when you open an account with E*TRADE. Rebate and Gift Certificate offers valid through 12/25/99.

Visit our NEW and IMPROVED

Faster, Easier Browse and Search Check Your Order Status Anvtime

Express Checkout lets you order in a hurry

Register to

Visit your one-stop source for USB products www.zones.com/usb

USB Imaging

UMAX Astra 2000U Scanner

\$12998

-125

\$498

#622652

when you open an





USB Connectivity

Connect your existing

printer to your iMac!

Serial Adapter

Ultra-thin, ultra-convenient!

USB Zip 250 Drive

lomega

USB Twin

USB Storage





Cool looking drive

Floppy Drive

VST USB

Use floppy disks and add

120MB storage!

Imation USB #109035

SuperDisk Drive 2X

handles 1.44MB floppies!





**After \$50 mfr. mail-in rebate. Low Zone price: \$229.99.



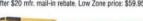


Order by Phone

1.800.436.0606









NEW Version! #652996

*After \$50 mfr. mail-in rebate for upgraders or crossgraders. Low Zone price: \$94.98



\$30 Rebate! Special Edition for the iMac & iBook

#648707**\$7798***

*After \$30 mfr. mail-in rebate. Low Zone price: \$107.98.



NEW Version! Photoshop 5.5 Upgrade

#83084 \$109⁹⁷ *After \$70 mfr, mail-in rebate for owners of Photoshop 5.0 and Image Ready 1.0. Low Zone price: \$179.97



NEW Version **Virtual PC** #654332 \$**16998**

Corporate bids welcome! Fax to 1-800-684-8080

Easy to use external

LaCie 10GB Ext.

USB Hard Drive

USB Hard Drive!

A NASDAQ® COMPANY Ticker Symbol: MZON

650368

Source Code MW001

8999

#107094

MacAlly USB programmable Game Pad **iShock**

Order Online Today

macZone's

Power Mac G4

the next generation of



Zones.com Has Oi





Microtek ScanMaker 4 **Dual Platform**



Keyspan USB Twin Adapter

Add external Serial devices to your Power Mac!



Apple Int. 56K V.90 Faxmodem

for G3 Special Zones Price! Software!

Epson Stylus

Entrega 7-Port USB Hub

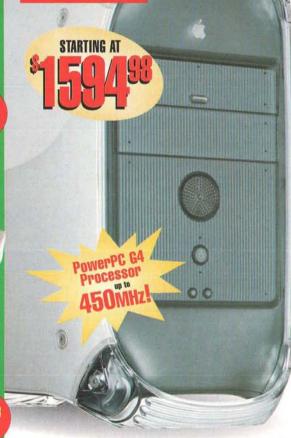
Connect USB peripherals!

Epson EPL-5700i **USB Laser** Printer



Adaptec Internal SCSI Card

Adds an external SCSI port to your new Power Mac! when you purchase a CPU and Epson 900 Series Printer together! Offer good through 1/31/00



NEW! Apple Power Mac™ G4

Every Power Mac G4 Includes:

- Two 400 Mbps FireWire ports
- Two 12 Mbps **USB** ports
- 10/100Base-T **Ethernet port**
- Up to 1.5GB maximum system memory
- . Up to 100GB maximum HD storage

- 100MHz system bus
- · Three 64-bit 33MHz PCI slots
- One 32-bit 66MF PCI graphics slo with 16 MB SGRAM; ATI **RAGE 128** 2D/3D graphics accelerator

Apple® 17" Studio Display



#109995 Apple 21" Studio Display \$1494.98



ONLY \$49

per month to own a Power Mac G4 and matching Apple 17" Studio Display! Call to apply for an Apple Loan today!

Huge Selection Great Prices Professional Sale

Adobe Publishing Collection

- Photoshop 5.5 Illustrator 8.0
- PageMaker 6.5 Plus
- · Acrobat 4.0



Adobe Photoshop 5.5 Upgrade

The latest evolution of an industry standard!



**After \$70 mfr. mail-in rebate for owners of Photoshop 5.0 & Image Ready 1.0. Low Zone price: \$179.97

Adobe InDesign Cross-Grade with 6 month subscription to Publish Magazine!



#107035 Adobe InDesign - Full Version \$698.98 *Special low price for Quark, Photoshop, Illustrator & PageMaker owners.

MetaCreations Kai's Power Tools

6.0 for 3.0 or 5.0 Upgraders



#After \$50 mfr mail-in rebate

QuarkXPress 4.0

Comp. Upgrade Over 75 new features!



\$799.98 & CorelDRAW 8 Bundle





Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones international (MZI) are third party products and are subject to the warrantles & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warrantly with respect to Y2K compliance of product sold. ©1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple, the Apple logo, Macintosh* and PowerBook* are registered trademarks of the Apple Computer, Inc.

- Gotta Have One!

eady And Waiting For You!

Choose the Power Mac G4 That's Right for You!

G4 performance at a great low price!

Apple® Power Macintosh® G4

350MHz Minitower

64MB SDRAM 10.0GB Hard Drive

32x Max. Variable Speed CD-ROM 56K Modem

Expansive storage space and built-in Zip drive!

Apple® Power Macintosh® G4

400MHz Minitower

128MB SDRAM 20.0 GB Hard Drive DVD-ROM Drive,

Plus Zip Drive. 56K Modem

ONLY #109992

OR LEASE FOR JUST \$56/Mo.

ONLY

OR LEASE FOR JUST \$88/Mo.

Screaming performance and DVD-RAM - a power user's dream!

Apple® Power Macintosh® G4 450MHz

Minitower

256MB SDRAM 27.0GB Hard Drive

DVD-RAM

for up to 5GB removable storage

Plus Zip Drive



ONLY

JUST \$123/Mo.

Business Lease: 36-month, fair-market value lease based on approved credit. Other leasing options available. Leases require a minimum order of \$1000. Call 1-800-611-9751 for details.

Meet the PowerPC G4

with Velocity Engine – the first supercomputer on a chip!

"Currently, the G4 is significantly faster than any platform we've seen running Photoshop 5.5"

John Warnock Adobe CEO of Adobe

450MHz PowerPC G4 = 3x Faster

Photoshop runs...

2x Faster than PIII 600MHz

1 Billion floating point operations =

1 Gigaflop

Supercomputer 1Gigaflop = Processing Power

Velocity Pentium Engine Processes Processes information

information n 128-bit in 32- or 64chunks bit chunks

And SAVE \$ 125 on ANY Purchase when you open an account with E*TRADE. Call us for details. Rebate & Gift Certificate offers valid thru 12/25/99 Iomega USB Zip 250 Drive

S 200 Instant Rehate! on Select computers

\$25 Mac Zone Gift Certificate! with CPU purchase

Exclusive

\$79.98

Fuji 5-Pack Zip Disks With FREE Case!



"After \$10 mfr. mail-in rebate Low Zone price: \$49.98

VST External USB Floppy Drive

Use your old ONLY floppy disks (and files) with your

#107094 new Power Mac G3!

Apple 15" Flat Panel Display

Sony 17" FD A200 Display



Epson Stylus Scan 2000 USB **All-in-one Printer**



Imation USB SuperDisk 2X



a Floppy Drive!

Apple 21" Studio Display



dvisors who can find whatever you're looking for!

Norton Utilities 5.0 for Mac



Microsoft Office 98 Special Edition for the Macintosh

LACIE FIREWIRE 20.4_{GB} **Hard Drive**

• 9.5 MS Seek time 1.2MB/s Transfer rate

USB Interface



Great Prizes! Visit our NEW

Zones.com

and IMPROVED

Register to

Faster, Easier Browse and Search

Check Your Order Status Anytime

Express Checkout lets you order in a hurry

Order Online Today

Corporate bids welcome! Fax to 1-800-684-8080

Source Code MW001

Order by Phone 1.800.436.0606

A NASDAQ® COMPANY Ticker Symbol: MZON

maczone Hot Gifts for

the next generation of



Go to Zones.com for great savings





The best deathmatch experience in the universel

Quake III Arena



Build and control vour own city! SimCity 3000



ONLY

Take the controls of podracers! Star Wars: **Episode I Racer**



Engage your troops across the galaxy! **Total Annihilation Gold Edition**



Lara Croft is back again! Tomb Raider III -**Adventures of Lara Croft**



This action-packed bestseller is back, optimized

for Internet gaming! **Descent 3**



Conquer the world! **Age of Empires**



Here's your chance to fly like a real pilot! Fly!



Authentic NFL football! Madden **NFL 2000**



Role-playing in the tradition of Advanced **Dungeons & Dragons! Baldur's Gate**



Fight terrorism as if 5.7 billion lives depend on it!

Tom Clancy's Rainbow Six



Build railroad empires! Railroad Tycoon II





Help Steve, Blue & friends find the treasure chest! Rhue's

Treasure Hunt



Slapstick humor on Tatooine! Star Wars Pit Droids



To infinity and beyond

Toy Story 2 Activity Center



Includes two games! Freddi Fish **Deluxe Pack** with FREE Watch





Solve mysteries with the Rugrats gang! **Rugrats Mystery** Adventure



There can be but one Grandmaster warrior! Unreal **Tournament**

THE ULTIMATE TOOLS FOR GAMERS



Special Buy! Ariston **Ares Joystick**





Earthmate GPS w/Street Atlas 5













Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to VZK compliance or, accordingly, MZI makes no representation or warranty with respect to YZK compliance of product sold. "1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple," the Apple logo, Macintosh® and PowerBook® are registered trademarks of the Apple Computer, Inc.

e Holidays

n everything on your shopping list!

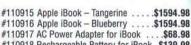


- Faster, Easier Browse and Search
 - Check Your Order Status Anytime
 - Express Checkout lets you order in a hurry

Register to

Apple

- 300MHz PowerPC™ G3 processor
- 3.2GB IDE hard disk
- 32MB SDRAM. upgradeable to 160MB RAM
- 12.1" TFT **Active Matrix** SVGA display (800x600)
- 24X maximum variable speed **CD-ROM** drive
- 56K modem, 10/100 Ethernet
- Translucent polycarbonate case
- Battery life up to six hours
- Weighs only 6.7 pounds







Get Unplugged! iBook AirPort **Base Station**

- . Surf the Net or network wirelessly*
- Up to 150' range lets you and the iBook roam around the home or classroom

#110919 AirPort Card \$99.98 *Requires the AirPort Card

Mac Zone Exclusive

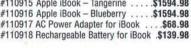
40 E*TRADE

when you open an E*TRADE account. Rebate and Gift Certificate offers valid through 12/25/99.

Go to our NEW online store at www.zones.com/etrade

for E*TRADE offer details. Call for details on our other exclusive Mac Zone offers.

#110916 Apple iBook - Blueberry \$1594.98 #110917 AC Power Adapter for iBook . #110918 Rechargeable Battery for iBook .\$139.98







ONLY

200

USB to IR remote control for DVD, CD, QT or MP3 Player Kevspan **Media Remote**



107487 4X more power than AA's! Digipro **Ext. Battery for**

Digital Cameras





Camcorder Case



Logitech Express







Corporate bids welcome! Fax to 1-800-684-8080

Source Code MW001

Order by Phone 1.800.436.0606



A NASDAQ® COMPANY Ticker Symbol: MZON

macZone[®]

the next generation of



SAVE \$350

Best Sellers!



NEW Version! Office 98

Upgrade Mac Edition

#55870 **\$249**97 #105073 MS Office 98 for Mac\$419.97

deluxe Quicken

\$20 Rebate! NEW Version for Mac!

#653343 ***3995***
After \$20 mfr. upgrade mail-in rebate, Low Zone price \$59.95



\$40 Rebate!

NEW Version **5.0**

#652996 **\$44**99

After \$50 mfr. upgrade mail-in rebate. Low Zone price \$94.99



\$40 Rebate!

6.0 for Mac! #652997 \$2498

*After \$40 mfr. mail-in rebate. Low Zone price \$64.98



NEW Version!

Virtual PC 3.0 with Win 98

#654332 **\$169**98 Call to order.



Upgrade Now!

Acrobat 4.0 Upgrade

#83063 **89**98

#93952 Acrobat 4.0 - Full Version . . . \$219.98



Now Shipping!

Adobe InDesign Crossgrade With FREE 6 month subscription to Publish Magazine

Magazine \$299*

#107035 Adobe InDesign – Full Version \$698.98
*Special low price for Quark, Photoshop,
Illustrator & PageMaker owners.

NEW at Zones!

Yellow Dog Linux for the PowerPC

Call for details. Ask for #111130

See our full selection of top hardware at Zones.com









56K V.90 Fax/Modem







Castlewood ORB USB 2.2GB External Drive



Color Inkjet Printer

**After \$50 mfr. mail-in rebate. Low Zone price \$229.99







HP DeskJet 832 USB





Network printing for workgroups!
HP Color LaserJet
4500N Printer

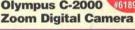














Easy to use, big on features! Kodak DC215 Millenium

INCLUDES
USB
Card Reader
90 VALUE



XLR8 InterView[™] USB with Strata VideoShop[™]





Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges, Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products soid by Multiple Zones International (MZI) are thirty party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to YZK compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. "1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple," the Apple logo, Macintosh* and PowerBook* are registered trademarks of the Apple Computer, Inc.

\$200 Instant Rebate! on Select computers

Visit our NEW and IMPROVED

\$25 Mac Zone Gift Certificate! with CPU purchase And SAVE \$125 on ANY Purchase

Faster, Easier Browse and Search Check Your Order Status Anytime Express Checkout lets you

for more details.

when you open an account with E*TRADE. Rebate and Gift Certificate offers valid through 12/25/99.

order in a hurry Register to

verBook®

- Two USB ports
- FireWire capable*
- Mac OS 8.6
- **8MB VRAM**
- S-Video/TV output for easy connection to a TV or a VCR
- ATI Rage LT Pro graphics accelerator for enhanced 2D and 3D graphics

*Optional FireWire CardRus Card



20% Thinner & 2 lbs. Lighter!



- 10/100 Base-T Ethernet port
- 384MB max. system RAM
- 56K V.90 modem
- Built-in SCSI port
- Integrated 4 Mbps IrDA technology for easy wireless LAN access, printing and file sharing
- Lithium-ion battery; support for dual-battery operation
- Hot-swappable expansion bay

Visit www.zones.com/apple for even more product information NEW! Apple® PowerBook® \$4 G3/333MHz #108066

64MB RAM, 4.0GB HD, 24X max. var. speed CD-ROM, 512K Backside Cache, 14.1" Display

Case

#111448

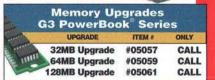
NEW! Apple® PowerBook® \$4 G3/400MHz #108067

64MB RAM, 6.0GB HD, DVD-ROM, 1MB Backside Cache, 14.1" Display

Mac OS9 *With purchase of Mac 0S 9 Bundle and \$20 mail-in Appli rebate for 0S 8.5/8.6 owners See the first page of this ad for more details



Back-up Bonus Buy'



We offer a complete selection of accessories for your NEW PowerBook G3!



Corporate bids welcome! Fax to 1-800-684-8080 A NASDAQ® COMPANY Ticker Symbol: MZON

Source Code MW001

Order by Phone 1.800.436.0606 Order Online Today

Circle 71 on card or www.macworld.com/getinfo

MacVARIETOUSE



NEW! Power Mac G4s

Nikon • Apple • Quark • Kodak • Iomega • PowerUser • Canon • Apple



- Our sales staff is ready to take your order 24 hours a day, 7 days a week. We accept the following major credit cards: Visa, MasterCard, Discover Card/NOVUS, AmEx. Your credit card will
- measterout, uscover cardinaryors, ninex rout refort card will not be charged until each item is shipped (no surcharge). CT, IL, NJ and OH residents add applicable sales tax.

 Overnight delivery just 59.95 per order up to 5 pounds. For all orders over 5 pounds, shipping is \$9.95 plus an additional \$1.75 per pound or fraction thereof. (Example: shipping for a 6 pound order is \$11.70). Please add an additional \$3.00 for all orders \$50.00 and turber of the properties of the prope \$50,00 and under.
- · Orders for "in-stock" items placed on weekdays up until 12:00 midnight (E). 10:00 pm (E) for Internet orders, ship same day for
- overnight delivery (barring system failure, etc.). We anticipate being able to ship "out-of-stock" items within 30 days.
- All items we sell come with the MacWAREHOUSE 30-Day Guarantee Against Defects. Call our Customer Service Department at 1-800-925-6227 for a Return Merchandise Department at 1-80/226-b227 for a Keturn Merchandise Authorization (RMA) number within 30 days of the original invoice date. Defective software will be replaced immediately upon receipt of the defective product. Defective hardware will be replaced or repaired at our discretion, except for products from Apple 1-800-S0S-APPL (1-800-876-2727), or Tektronix (1-800-835-6100). These manufacturers must be contacted directly, and will repair or replace products at their sole

discretion. Should you return hardware to MacWAREHOUSE from oscretion, should you return hardware to MacWAREHOUSE from Applie or Tektronix, you will be assessed a 15% restocking fee which will be charged to your account. All returns are subject to the following: 1. All products must be returned in original packaging. 2. Shipping and handling charges are not retundable. 3. Software and consumables are not refundable unless returned unopened in original packaging with documentation. 4. Custom orders and cables are not refundable. 5. Products designated as "all sales final" are not refundable.

designated as "all sales final" are not refundable. Copyright® 1999 Micro Warehouse, Inc. MacWAREHOUSE® is a division of Micro Warehouse, Inc. Item availability and price subject to change without notice. We regret that we cannot be responsible for typographical errors. All prices shown in U.S. dollars. Micro Warehouse makes no representations or warrantitor of any kind and assumes no liability concerning whether any of the products or services sold by us are Year 2000 Compliant. Year 2000 representations and warranties may be supplied directly to our customers by the manufacturers or publishers of certain products.



§ Leases are only available to business customers with approved credit on product orders where at least one product totals \$750 or more. Lease payments are based on a 48-month Lease. Call today to see how you can qualify. Lease terms are subject to change. 128 January 2000 MACWORLD

WARIEROUSEcom

Speeds # 450MHz!



Nikon • Adaptec • Tektronix • Epson • AGFA • Kodak • Iomega • Quark



- Velocity Engine with advanced vector processing
- Superfast 100MHz system bus and 1MB Backside Level 2 Cache running at half the processor speed
- Up to 256MB PC100 SDRAM, expandable to 1.5GB
- Up to 27GB ATA hard drive space
- 24x max, variable CD-ROM, or DVD-ROM or DVD-RAM drives - both with video playback
- Built-in 100MB Zip drive (CPU1514, CPU1515)
- 56K modem (CPU1513, CPU1514)
- Built-in 10/100Base-T Ethernet
- Built-in antenna and support for optional Airport wireless networking (CPU1514, CPU1515)
- ATI RAGE 128 graphics card with 16MB of graphics memory installed in a 133MHz AGP 2X slot (CPU1514, CPU1515)
- Four expansion slots, including three 64-bit PCI slots and one dedicated graphics card slot
- As many as three 400-megabit-per-second FireWire ports (CPU1514, CPU1515)
- Two USB ports



Ultra ATA/33 HDD/24x max. variable CD-ROM/Two FireWire ports/ 56K modem

Item #CPU1513...

Leaselt! for as low as \$47/mo.



Power Mac G4/400 MHz

400MHz G4 processor/128MB SDRAM/20GB Ultra ATA/66 HDD/DVD-ROM with DVD-Video Playback/Three FireWire ports/ 56K modem/Zip Drive

Item #CPU1514 Leaself! for as low as \$73/mo.§

Power Mac G4/450 MHz

450MHz G4 processor/256MB SDRAM/27GB

Ultra ATA/66 HDD/5.2GB DVD-RAM with DVD-Video Playback/Three FireWire ports/ Zip Drive

Item #CPU1515

Leasett! for as low as \$102/mo.

AGFA 1212U SCANNER

Only \$**89**95! IN7951

40 REBATE!

Translucent Bondi blue!

• 36-bit color

* Price AFTER MicroWAREHOUSE \$40 mail-in reha Rebate coupon available at www.warehouse.com/rebate/agfa or call 1-800-390-0706. Offer expires 12/31/99 or while supplies last.

Epson Stylus Color 900 Printer

Only **9**95 PR1481

- 12ppm black; 10ppm color • 1440 x 720 doi
- Optional networking

EPSON

Nikon CoolPix 950 **Digital Camera**



- · 2.11 million pixel resolution
- Nikon 8MB compact flash stores up to 128 standard images

Adaptec PowerDomain 2930U Ultra SCSI Adapter



Only **99**95! DRI3165

20MB/sec. transfer rate Internal & external connectors • Bootable

Gadaptec

Phaser 840GP Printer

Tektronix

Only 995 PR15354



- 10PPM color/ 1200dni
- Adobe PostScript Level 3
- 10/100Base-T
- · ColorSync ready

PAGE 2 OF 8

1-800-434-3036 * www.warehouse.com/m

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! 💆 CANADA ORDERS CALL: 1-800-603-5139

midnight (E),or order online

Call by Midnight (E) for Overnight Delivery!

Your #1 Source for Mac™ Systems and Products—since 1987!



MacVARIETOUSE

PRICE SLASHED \$300 on

Broderbund • Apple • Iomega • Hewlett Packard • Umax • Kensington • Sony • VST



Virtual PC 3.0 with Windows 98

Run PC software on your Mac! MacWAREHOUSE Exclusive!

\$15995! Connectix

UT11562: Virtual PC 3.0 with Windows 98 (Full Version) \$159.95*
UT11563: Virtual PC 3.0 with Windows 95 (Full Version) \$149.95
UT11564: Virtual PC 3.0 with PC DOS (Full Version) \$49.95
UPG1099: Virtual PC 3.0 Upgrade \$49.95

"Price AFTER MicroWAREHOUSE S20 mail-in rebate. Before rebate: \$179.95. Rebate coupon available at www.warehouse.com/rebate/ connectix, or call 1-800-390-0706 to request one. Limit one per customer. Offer expires 12/31/99.

NEW LOW USB Floppy Drive

Only RA 95! DRI3296

- · Cool translucent design · USB interface
- For iMac, iBook, and Power Mac G3

Imation Mac Neon 3.5" Disk 10-pack. only \$5.99 (59¢ each), item #MED0540



HP DeskJet 882c **Color Printer**

Only 4Q95 PR14684

. USB compatible only

- . 9ppm blk; 6,5ppm clr
- · PhotoRET II technology

67208: Black Ink Cartridge\$29.99



PACKARD

iMac USB Hubs

As low as **59**99! **DEH4075**

. Provides 4 to 7 additional USB ports for expanding your peripherals. entrega.

· Matching iMac color case DEH4075: USB 4-port Bondi-Blue DEH4727: USB 4-port Blueberry . DEH4729: USB 4-port Tangerine . \$59.99

UMAX Astra 2100u Color Scanner



IN 7925 • 36-bit • 600 x 1200 doi

2995!

USB UMAX USB interface

"Price AFTER manufacturer's \$20 mail-in rebate. Before rebate: \$149.95. Rebate coupon available at www.warehouse.com/rebate/UMAX, or call us at 1-800-390-0706 to request one. Offer expires 12/31/99.



333MHz Apple iMac

• 333MHz G3 Processor • 32MB SDRAM (exp. to 256MB) . 6.0GB hard drive . 24X max, variable CD-ROM drive . 56K modem 10/100Base-T Ethernet • ATI RAGE Pro Turbo 2D/3D graphics accelerator with

6MB video memory • 15" color monitor

Leaselt! for \$28/mo.§

Blueberry: Item #CPU1336 Grape: Item #CPU1337 Lime: Item #CPU1338 Strawberry: Item #CPU1339

Only

each

Leaselt! for \$38/mo.

Competely NEW iMac - Mixed 3 different ways!

Apple iMac 350MHz Blueberry

- 350MHz PowerPC™ G3 processor
- 512K Backside Level 2 Cache
- . 64MB of SDRAM (exp. to

512MB) • 6.0GB Ultra ATA HD drive • 24x (max.

variable) CD-ROM • Built-in 56K V.90 modem

 ATI RAGE 128 VR 2D/3D graphics accelerator with 8MB

SDRAM (AGP 2X) Odyssey audio system from Harman/Kardon

- 15-in. color display10/100BASE-T Ethernet
- 2 USB ports (12Mbps each) • Support for AirPort 11Mbps

wireless networking

a built-in; AirPort card o

Only #CPU1492

Leaselt! for \$29/mo.



2 Apple iMac DV 400MHz

Includes ALL the **NEW Features of the** 350MHz Model -PLUS -

- 400MHz Processor
- Slot-loading DVD drive
- Movie-making software
- Two FireWire ports
- 10.0GB Ultra ATA HD drive



Item #CPU1496

Item #CPU1493

Item #CPU1495

#CPU1497

Item #CPU1494

\$ Leases are only available to business customers with approved credit on product orders where at least one product totals \$750 or more. Lease payments are based on a 48-month lease. Call today to see how you can qualify. Lease terms are subject to change.

IDOCK 2 SWIVEL BASE FOR IMAC

COMPUCABLE

- · Floppy drive
- Swivel Base
- · 4 USB ports

Item #DEH4620



with any purchase from MacWAREHOUSE

Item #AAA0742

Challenge your puzzle-solving skills in the Island world that is Myst

\$3.95 shipping and handling applies. Shipped in pro tional packaging. Hurry! Offer good while suppli "Value based on MacWAREHOUSE pricing as of



PAGE 3 of 8

ORBIT USB FOR MAC

Only \$4995!

- . Designed specifically for use with USB
- . Fits the natural shape of your hand: ideal for right or left-handed users

Manufacturer's 5-year warranty

USD CH

HP DESKJET 895CSE PRINTER

Only

- · 11ppm black
- . 8.5 ppm color PhotoRet II technology Black Ink Cartridge: 67208 \$29.99



SONY DIGITAL FD73 MAVICA

10x optical zoom . E-mail mode

- 2.5" Color I CD VGA resolution
- Quick Access 2X Floppy Disk Drive Picture effect File copy/disk copy



KENSINGTON

WARISHOUSEcom

333MHz iMac G3 now \$899!



Epson • Connectix • Entrega • Farallon • Microsoft • XLR8 • Intuit





lomega 100MB Zip Disks as \$899! each, low as in 20-pl

Item #BND3616 (gray), only

\$17980

Only

EtherMac iMac **iPrint Adapter** with built-in PhoneNet!

109^{99!} **DEP1734**

 Connects your iMac to LocalTalk printers and other Macintosh computers

· Easy plug-and-play installation Ethernet iPrint Adapter for Stylewriter: DEP1739



XLR8 InterView



sag DRI3561

· Captures audio/video through USB interface

Includes Strata Videoshop 4.5

Quicken 2000



XLLE

Upgrade only \$39<u>95!*</u> upgrade rebate FIN1008

· Gain insight into your financial situation

Easier than ever to use with improved interface!
 Access investment news, research and tools

*Price AFTER publisher's \$20 mail-in upgrade rebate. Before rebate: \$59.95, See box for details. Offer expires 9/30/2000.

Microsoft Office 98



Upgrade only 4995 UPG0778

Includes Word 98, PowerPoint 98, Excel 98, and Outlook Express.

Microsoft Office 98 Full Version: BUS1150\$41995

PAGE 4 of 8

www.warehouse.com/rebate/epson, or call us at 1-800-390-0706 to request one. Offer expires 1/31/2000. fore rebate: \$119.95. Rebate coupon in box $-800-434-3036 \pm www.warehouse.com/$

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! 🌺 CANADA ORDERS CALL: 1-800-603-5139

Your #1 Source for Mac Systems and Products—since 1987!



WORD 98 FOR IBOOK AND IMAC

NEW!

Word 98

Special Edition!

9<u>95</u>!*after

\$30 rebate

Special Edition for iBook and

Includes Word 98: thousands of clip-art

images; greeting card templates, Internet Explorer 4.5; and Outlook Express 4.5.

Only

Item # WP3072

*Price AFTER publisher's \$30 mail-in rebate

iMac only.

* EXPRESS DELIVERY

\$50 rebate

EPSON STYLUS COLOR 740i PRINTER

EPSON

· Comes in Blueberry or can be customized for an

. 6ppm blk; 5ppm clr . USB/Mac serial compatible

additional \$14.95 to match your iMac

. 1440 x 720 dpi with smaller ink drops

Item # PR15063

PA1582: Black Ink Cartridge\$29.99
Price BEFORE manufacturer's \$50 mail-in rebate is
\$229.95-\$50 rebate=\$179.95. Rebate coupon available at

In-stock items.

Call for different

color covers!

Other color covers available for only \$14.95 each!







Apple iBook-Fast, Loaded,

Apple • Newer Technology • Global Village • Imation • 3Com US Robotics • Keyspan







OLYMPUS

19995! IN8167

- 1.3 megapixel resolution
- 3X optical/2X
- digital zoom
- card included

SupraExpress V.90 Modem



· Manufacturer's 3-year warranty

Item #MT3320





Item #SYS1012

- Enhanced Sherlock 2
- · Better System Security and Personalization
- · Faster File-Sharing on the Web
- · Remotely access and control all of your Macs
- · Lock out unauthorized access to your system using voice print passwording

*Price after Apple \$20 mail-in upgrade rebate and MacWAREHOUSE \$10 mail-in reb Trice after Apples 3cu mail-in upgrace rebate and MacWAREHOUSE \$10 mail-in rebate. Before rebates: \$99.95. Apple rebate requires proof of ownership for 08.8.5, 08.8.51 or 08.8.6. Rebate coupon in box. Offer expires \$17/2000. MacWAREHOUSE rebate limit one per customer (or 5 per customer site.) MacWAREHOUSE rebate coupon available at www.warehouse.com/rebate/applesoftware or call us at 1-800-390-0706. Not to be combined with other MacWAREHOUSE offers. Rebate expires 1/31/2000.

VIEWSONIC P810 21"



Mac OS9

• 21" (20" viewable) screen

.25mm dot pitch

• 1800 x 1440 @ 73Hz resolution

IOMEGA 100MB ZIP DISKS



Item #BND3616 \$17950 BND3616

100MB Zip Disk Color 10-pack \$9995

Grav



PAGE 5 OF 8 IMATION CD-Recordables

• 650MB

included

10-pack before manufacturer's mail-in rebate: \$21.99. Download coupon at www.warehouse.com/rebate/ imation ask for coupon at warshouse.com/rebate/ imation ask for coupon at warshouse.com/rebate/ imation accordance of the coupon accordance of the coupon accordance of the coupon accordance of the coupon nailing address. Offer expires 12/31/99.





WARIEROUSE.com

and Ready to Go! only \$1599!ea.



120MB SuperDisk Drive

IMATION • USB & Hot-Swappable!

Targus Notepac Plus

Black Carrying Case

SuperDisk Media 10-pack: BND3239, only \$69.99** (\$6.99 ea.)

*Price AFTER manufacturer's \$20 mail-in rebate Before rebate: \$109.99. Expires 1/15/2000.

"Price AFTER manufacturer's \$30 mail-in rebate. Before rebate: \$99.99. Expires 6/30/2000.

Rebate coupons are available at www.warel

Only \$59^{95!} AC19972

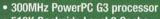
ARGUS

or call us at 1-800-390-0706 to request them.

Reads and writes 3.5" floppies

Hewlett Packard • ViewSonic • Iomega • Olympus • FileMaker • Amazon • Targus

Apple iBook — 300MHz G3 Power! Packed with power, and wrapped in a stunning notebook design!



- 512K Backside Level 2 Cache
- 32MB SDRAM 3.2GB IDE hard drive
- · 24X max, variable CD-ROM
- 56K V.90 modem 10/100 Base-T Ethernet
- Wireless networking with optional AirPort card and base (sold separately)
- 12.1" Active-Matrix Display
- ATI Rage Mobility 2D/3D Graphics Accelerator with 2X AGP

Leaselt! for \$47/mo.5

> Also available in Tangerine.



PowerBook G3 Battery



Call for other cases! Notebook and accessories not included.

ACC3728 (fits new 1999 models)\$139.95 ACC3307 (fits 1998 models) shown,\$199.95



149⁹⁹ DMD3824

 K56 Flex and V.90 technology Send, receive, view, print, and manage

faxes right from your PowerBook

*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.



FireWire 2 Go

Add FireWire to your PowerBook G3!



PAGE 6 OF 8



- USB port
 4MB Video Memory
- Lithium-ion battery—up to 6 hours of use!

#CPU1464

Additional Lithium-lon **Battery**

Item #ACC3804 ...

333MHZ POWERBOOK G3S

333MHz PowerPC G3 processor

Order Online at

www.macwarehouse.com

64MB SDRAM • 4.0GB IDE HD

Blueberry. Item #CPU1463

- 24X max. variable CD-ROM 56K Modem • 14.1" Active-Matrix
- Display 512K Backside Level 2 Cache • 8MB SDRAM Video Memory

333MHz PowerBook G3 only

Leaselt! for \$73/mo.*

Item #CPU1359



iBOOK/POWERBOOK G3 MEMORY

Upgrading your memory is the most cost-effective way to increase the performance of your system!

32MB iBook. PowerBook G3 Memory only

Item #CHP9820



Leaselt1 for \$102/mo.5 Item #CPU1360

AIRPORT CARD & STATION

400MHZ POWERBOOK G3S

Powerful networking hold the wiring

· Wireless Internet surfing, on-line gaming, or office networking from up to 150 feet away

400MHz PowerPC G3 processor

• 64MB SDRAM • 6.0GB IDE HD

DVD-ROM • 56K Modem

14.1" Active-Matrix Display

. 1MB Backside Level 2 Cache

400MHz

PowerBook G3 only

8MB SDRAM Video Memory

· Speeds up to 11MB per second

AirPort Card for iBook only

AirPort Rase Station for iRool \$299

DFR2555



es are only available to business customers with approved credit on product orders where at least one product totals \$750 or more. Lease payments are based on a 48-month Lease. Call today to see how you can qualify

800-434-3036 * www.warehouse.com

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! 💆 CANADA ORDERS CALL: 1-800-603-5139



Call by Midnight (E) fo Overnight Delivery!

Your #1 Source for Mac Systems and Products—since 1987!

MacVARIETOUSE

Now Shipping! Get Adobe InDesign

Apple • 3Com • Global Village • Kodak • Mitsubishi • Iomega • Microtek



- 1600 x 1200 resolution
- · 3X ontical zoom

8MB SmartMedia Card included!

Print out your digital photos on the new Olympus P330 Stylus Photo Printer PR14784 *399.95

32MB SmartMedia Cards



Digital film for digital cameras

· Compatible with new digital cameras with SmartMedia slot



Microtek ScanMaker 4



transparency & slide bay

MICROTEK • 8.5" x 14" scanning area tWith the purchase of ScanMaker 4. Templates shipped in ScanMaker box. Offer expires 1/30/2000 or while supplies last

Imation 8X CD-Recordables



3Com Palm Ille with **Mac Pac version 2 Software**





clear casing!

• 2MB of memory to store

tons of information

PAGE 7 OF 8



w only

Apple Power Mac G3

- 350MHz 40, 100
 - 64MB SDRAM
 - 6.0GB HD 24X max. variable CD

Only

Item #RCPU1382 Monitors sold separately, Model Power Mac G4/350MHz/64MB SDRAM/10 0GB Ultra

Power Mac 64/350/MIDZ/04/MID 65/56K modem \$1499 Power Mac G4/400MHz/64MB SDRAM/10.0GB Ultra

ATA/33 HD/32X max. variable CD/ 56K modem: RCPU1475.

Power Mac G3/400MHz/64MB SDRAM/

\$1599

APPLE 333MHZ IMACS: **5 COLORS TO CHOOSE FROM!**

- 333MHz PowerPC G3 processor
- 32MB SDRAM (256M8 max.)
- 6.0GB hard drive
- 24X max. variable CD
- 56K modem
- 15" color monitor

tem #RCPU1338

Grape: Item #RCPU1337

Bidegerry: Item #RCPU1336 Strawberry: Item #RCPU1339

www.macwarehouse.com

RECONDITIONED

Reconditioned system. Reconditioned computers may not include original application software. 90 day parts and labor warranty. All sales final. While supplies last.

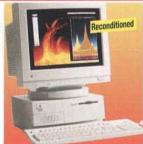
POWER MAC 7200/90MHZ

- 90MHz PowerPC 601 processor
- . 16MR RAM
- . 500MB HD . 4X max. variable CD

Item #RCPU1471

RCPU1474: Performa 6200/180MHz, 16MB RAM,1.0GB HD, 8X max. variable CD Only \$599*

Reconditioned system. Reconditioned reconductions system. Reconductions computers may not include original application software. 90 day parts and labor warranty. All sales final, While supplies last. Monitor and keyboard not included.



DIAMOND PRO 900u 19" MONITOR

MITSUBISHI

- 1600 x 1200 @ 75Hz
- 18" viewable size
- 25 aperture grille
- · Manufacturer's 3-year warranty

Only Item #MON0765



APPLE POWERBOOK 540c/33MHZ

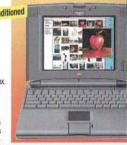
- 33MHz 68LC040 processor 20MB RAM • 240MB HD
- . 19.2 Kbps modem

. 9.5" Active Matrix Color Display

Item #RCPU1196 iBook G3/300MHz 32MB SDRAM/3.2GB HD/24x max.

variable CD/56K modem/ 12.1 Active Matrix Color Display RCPU1463: Blueberry only \$1499* RCPU1464: Tangerine only \$1499*

ditioned system. Reconditioned computers may not include original application software. 90 day parts and labor warranty. All sales final. While supplies last.



VIEWSONIC P810 21" MONITOR



- · 21" monitor (20" viewable)
- 1800 x 1440 @ 73Hz
- .25mm dot pitch

Only Item #MT3320



Jaz 2.0GB Cartridges

95! each,

00200

in 3+ quantity Quantity: 1-2 3+

Epson ELP 5700i **Laser Printer** 11

Only \$34995!* after mfr's \$50 mail-in rebate

 Sppm • Up to 1200 dpj • USB compatible only Price: \$124.95 ea. \$99.95 ea. \$99.95 ea. "Price BEFORE mfr's mail-in rebate is \$389.95 - \$50 rebate = \$349.95. Rebate cupon in box. Offer expires 1/31/2000. "Optional blueberry or grape cover available. Redeem through mfr's mail-in coupon in box.

П 11

Global Village 56K* Teleport Internal Mac Modem

Only \$899!† after mfr's \$20 mail-in rebate Ask for item #DMD4267.

*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vari *BEFORE rebate: \$109.99. Rebate coupon available at vww.warehouse.com/ rebate/globs/ village or call 1-800-390-0706 to request one. Offer expires 12/31/99.

WALKIE E COURSE COM

for only **Special low price** good until 12/31/99.



Olympus • Epson • ATI • ViewSonic • Sony • Adobe • Macromedia



Ask for item #SID0426, Offer expires 12/31/99

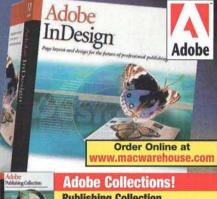
Adobe Photoshop 5.5



- \$179.95



Value!



Publishing Collection (Photoshop 5.5, PageMaker 6.5 Plus, Illustrator 8.0, and Acrobat 4.0.) 94995 Item #GRA2975...

Web Collection (Photoshop 5.5, GoLive 4.0, and Illustrator 8.0)

Item #COM1215

Design Collection (Photoshop 5.5, InDesign 1.0, Illustrator 8.0, and Acrobat 4.0.) \$129995 Item #GRA2974

\$94995

Dynamic Media Collection (Premiere 5.1, After Effects 4.0, Photoshop 5.5, and Illustrator 8.0)

\$148995 Item #GRA3007

COMPACT FLASH CARDS

 Digital film for storing pictures Compatible with all digital cameras

> **8MB Storage Card** Item #MY7648

48MB Storage Card Item #MY10017



NEXUS 128

- · Ultra fast graphic accelerator board
- Rage 128 graphics accelerator Supports up to 1900 x 1200
- 32MR memory

Only ▼ after rebate

Item #DRI3236

Price AFTER manufacturer's \$30 mail-in rebate Coupon available at www.warehouse.com/rebate/ati or call us at 1-800-390-0706 to request one. Offer



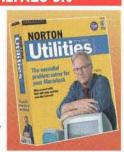
NORTON UTILITIES 5.0

- · Prevents computer disasters
- · Optimizes hard disk performance
- Helps prevent crashes, and speeds recovery from emergencies

Upgrade Only

after \$50 upgrade rebate. Item #UTI1546

*Price AFTER publisher's \$50 mail-in upgrade rebate. Before rebate: \$99.95. Rebate applies to owners of previous versions of Norton Utilities for Mac and Norton AntiVirus for Mac. Rebate coupon in box.



WWW.WAREHOUSE.COM

Get a FREE* gift when you order online.

Every time you order from our full line of Mac products on the Web, you can get one of these FREE*: MYST, Hot Door Transparency or FlashBack.

\$3.95 shipping and handling applies. Limit one per customer per order. Shipped in promotional packaging. While supplies last.



Dreamweaver 3





- · QuikTao Editor for editing
- History Palette and "Repeat Last Action" feature
- Apply global styles and automatically convert tables to layers

Sony Digital FD83 Mavica



- XGA resolution 1024 x 768ppi, 1216 x 916 interpolated
- · 3x Optical Zoom/6x Digital
- · 4x High speed floppy disk
- Audio & Video out 2.5" LCD



9995

Special Offer! CoreIDRAW 8



995!* **GRA3121** CorelDRAW 8 is an

incredible Software Collection for Illustration, page layout, photo editing, and morel

Extended On-Site Support



Toll-Free Technical Help

Fast On-Site Support — uplifts manufacturer's warranty to on-site 100% coverage for qualifying products
 Free Replacement if unit cannot be repaired!

No Deductible — 100% coverage on parts and labor!
 24-, 36-, and 48-Month Coverage — available from

date of purchase!

date of purchase!
6. Fully Insured — Program underwritten by an
7.4-Excellent" rated insurer
7. Fully Transferable — Even if you move or sell the
equipment, full coverage remains in effect.
Service you can depend on! Consult the chart below to
see which warranty best fits your needs:

and/or Peripherals	(36 months)	Ask for item #
\$701 - \$1,200 \$1,201 - \$2,000 \$2,001 - \$3,000	\$149.99 \$189.99 \$219.99	MW3003 MW3004 MW3005
Call your Account	Manager for terms icing options.	and other

Call your customer service representative to get extended support for just pennies a day!

Yeter This promotion is not a service agreement, but an outline of coverage available through Service Net. Please call Micro Warehous inc. for information and read the complete Service Agreement from Service Net, for exact coverages, terms, and conditions. Coverage begins after a manufacturer limits its warranty in any way. Plan not

PAGE 8 of 8

I-3036 ★ www.warehouse.co

Your #1 Source for Mac Systems and Products—since 1987!

CANADA ORDERS CALL: 1-800-603-5139



In-stock items, call weekdays by midnight (E),







Two Stylish New iMacs Now in Stock!

up to

400MHz iMac DV Special Edition!

or those who want a little more, there's the iMac DV Special Edition. It includes all the great features of the iMac DV models and it comes in a unique graphite color. Plus, it has twice the standard RAM and a larger hard drive than the iMac DV models.

- Processor and Memory
 400MHz Power PC G3 Processor
- 512K backside level 2 cache
- 100MHz system bus
- 128MB of SDRAM: two SODIMM slots support up to 512MB

Internal 13GB Ultra ATA hard disk drive



Internal 4X (maximum) DVD-ROM drive

Networking

- Built-in 56K V.90 modem
- Built-in 10/100BASE-T ethernet
- Supports AirPort wireless networking

Connectivity

- Two high speed Universal Serial Bus (USB) ports (12 Mbps), which support USB devices such as keyboard, mouse, printer, storage devices, and USB hubs
- Two 6-pin FireWire ports up to 400Mbps

Multimedia capabilities

VGA video mirroring

iMac D lodels

even make some of your own? An iMac DV model is your personal theatre for viewing DVD movies. Just connect your favorite DV camcorder to the FireWire port and use Apple's groundbreaking iMovie software to create your own digital movies. iMac DV models include built-in video mirroring for making presentations!

Outrageous performance

- 400MHz Power PC G3 Processor
- 64MB RAM 10GB hard drive
- 4X DVD-RAM drive
- 10/100 BASE-T Ethernet

#53019 Blueberry #53017 Strawberry #53018 Lime #53015 Grape

each #53016

(Tangerine) lease for \$52/Mo.

Instant Cash Back or Free Product

Your Choice! 🏽



Product Price	Cash Savings		Your Choice FREE	ON	DVD Player
\$850-999	¹ 25 Gift Cheque	or	Software	or	1249
\$1001-1599	150 Cash Back	or	Scanner	or	\$199
\$1600-2499	*100 Cash Back	or	Floppy drive	or	*149
\$2500-2999	150 Cash Back	or	Zip* drive	or	199
\$3000-3499	200 Cash Back	or	Tape drive	or	*49
53500-4399	250 Cash Back	or	Printer	or	FREE!
\$4400 +	*300 Cash Back	or	CD-RW	or	FREE
	Free products of	ffered are	whice to change		

Call now or visit macmall.com for details

Limited time offer. Valid until 1/11/00.

Astra 1220U USB UMAX'

600 x 1200dpi optical resolution 9600dpi maximum > 36-bit

color w/10-bit A/D Connector

Factory refurbished. 90 day warranty,

Regular price is \$69.99 (#52037)

For more info visit macmall.com



Order Any Time! Open 24 Hours! Order Today by 10pm EST—

1-800-217-9492

ays to Surf the Web!

The Portable ilVlac!

lazing speed, dazzling design and fast, easy access to the Internet! With its convenient handle, the iBook just begs to be taken with you! Download your email and read it anywhere. Take it when you visit your friends so you can play the latest MP3 files off the Internet.

The iBook's case is a rugged polycarbonate, built to survive life in a back pack. It has no doors or latches to break. And it's easy to charge. When it's time to reenergize, just plug it in until the light turns green. Simple.

Outrageous performance.

- PowerPC G3 processor running at 300MHz
- 512K backside level 2 cache on processor
- 32MB of SDRAM; supports to 160MB RAM
- 3.2GB IDE hard disk drive
- Built in 24X CD-ROM drive

Connectivity.

- One 12-Mbps Universal Serial Bus (USB) port
- Built-in 10/100BASE-T Ethernet
- Built-in 56K modem
- Optional AirPort wireless networking card

Advanced battery technology.

- Lithium-ion battery
- Up to 6 hours of battery life

Great graphics and video features.

- ATI RAGE Mobility graphics controller with 2X AGP
- 4MB SDRAM video memory
- 12.1-inch (diagonal) built-in TFT SVGA active-matrix display

■ 800 x 600 resolution with Single built-in speaker

- 13.5" x 11.6 " x 1.8" average; depth ranges from 1.24" to 2.06"
- 6.6 pounds

Cool software.

- Mac OS 8.6
- Microsoft Internet Explorer
- AppleWorks
- World Book Encyclopedia
- Nanosaur and Bugdom 3D games

With everything built in, the iBook is as Internet ready as a notebook can be!



Authorized

on all online FREE SHIPPING orders totaling over \$500

Call for details. Free shipping is via UPS Ground for deliveries in the continental U.S. Offer ends 12/31/99. Go to macmall.com

#53005 Blueberry #53006 Tangerine

Stylus Color 740i **EPSON Blueberry Printer** Optional printer covers in all iMac and iBook colors! 1440 #48226 Reg. price \$229.99-\$50 mail-in rebate= **New Low** Price! For more info visit macmall.com



Introducing AirPort!

Transform your new iBook into a wireless Internet surfing machine.

AirPort lets you access the Internet with your iBook from anywhere in your home, office, dorm or classroom—without wires! No more hunting around for a phone jack every time you want to get online. If you're within 150 feet of the AirPort, you're connected! All you need is an AirPort card for your iBook and the AirPort Access Point.

AirPort also lets multiple iBooks access the Internet at the same time, transfer files, and of course, play multi-player network games!

\$29999 #49221 AirPort Hardware Access Point #49222 AirPort Card

or AOL Keyword:

Mention your Priority Code: #ZMWD013



G4 is here!

The Fastest Desktop Ever!

ow fast is the new G4? This fast: The Power Mac G4 is the fastest desktop computer ever built to run graphics applications like Photoshop, InDesign and QuarkXPress. The G4 is actually years ahead of its time thanks to new supercomputing technologies like vector processing, data stream prefetching and 128-bit data paths. In fact, the 450MHz G4 is a stunning 2 to 3 faster than PCs based on the fastest Pentium III processor. So if you like the Pentium-crushing speed and the convention-crushing design, call MacMall today. The new G4 is just what you need for 3D rendering, special lighting effects, advanced voice recognition and digital video production.

"Apple® Power Mac™ G4... the first supercomputer on a chip!"

What makes a supercomputer "super" is its ability to execute at least one billion floating-point math operations per second. It's a staggering measure of speed known as a "gigaflop."

Next Generation Performance!

Outrageous power.

- PowerPC G4 processor running at 350, 400 or 450MHz
- Velocity Engine vector processing unit
- Full 128-bit internal memory data paths
- Powerful new floating point unit
- Data stream prefetching operations supporting four simultaneous 32-bit data streams
- 1MB of backside level 2 cache running at half the processor speed
- 100MHz system bus
- 64, 128 or 256MB RAM
- Supports up to 1.5GB of high performance PC100 SDRAM
- 10, 20 or 27GB Ultra ATA hard disk
- 32X CD-ROM drive, DVD-ROM drive or DVD-RAM drive
- 100MB Zip drive (some configurations)
- Built-in 10/100BASE-T Ethernet networking; optional Gigabit Ethernet

Advanced capabilities.

- Two or three 400Mbps FireWire ports
- Two USB ports for keyboards, mice, printers—up to 127 devices at once
- Optional AirPort wireless networking card
- Two additional internal drive bays
- Three 64-bit PCI slots

Great graphics and video features.

- ATT RAGE 128 Graphics Accelerator with 16MB of SDRAM graphics memory
- Support for up to 1,600-by 1,200-pixel resolution at 32 bits per pixel (millions of colors) and up to 85Hz refresh rate
- Hardware acceleration of graphics and video
- Advanced integrated triangle setup engine
- Single-pass multi-texturing design

Design elegance.

- Translucent silver and graphite case
- Easy, drop down accessibility for installing cards, drives, and memory
- handles for easy carrying

Convenient, built-in Visit macmall.com for more USB C



Product Price	Exclusive Cash Savings	ON	Your Choice FREE	on	DVD
⁴ 850-999	125 Gift Cheque	or	Software	or	°249
\$1001-1599	150 Cash Back	or	Scanner	or	§199
\$1600-2499	1100 Cash Back	or	Floppy drive	or	*149
\$2500-2999	1150 Cash Back	or	Zip [®] drive	or	199
\$3000-3499	² 200 Cash Back	or	Tape drive	or	±49
53500-4399	¹ 250 Cash Back	or	Printer	or	FREE
54400 +	*300 Cash Back	or	CD-RW	or	FREE
	Free products of	ffered are si	ubject to change.		

Call now or visit macmall.com for details.

EXPERIMG DON'T FORGET MEMORY!

COMPONENTS Upgrades for your Power Mac

\$23999

\$47099

597099

32MB PC100 DIMM

64MB PC100 DIMM

#42225 128MB PC100 DIMM

Limited time offer. Valid until 1/11/00.

#42224

HOT, NEW Add-ons for Your G4!

AirPort! The Power Mac G4* is ready for wireless networking-the first desktop computer with this capacity

#49221 AirPort Hardware Access Point \$29999 #49222 AirPort Card

*Works with the 400 & 450MHz models only.

The Perfect Compliment to Your G4!

17" (16" viewable)

.25mm dot pitch

> 1600 x 1200 @60Hz

Apple 17" Studio Display only \$49999 #51582

Apple 21" Studio Display #51583 with ColorSync

hance Your New Power



Stylus Color 900G Professional Printer

Up to 12ppm black and 10ppm color USB and serial. Optional FireWire \$329⁹⁹#

Price reflects \$100 mfr. mail-in rebate with computer purchase. Price before rebate is \$429°.

Add FireWire Storage!

For more VST FireWire drives, visit macmall.com.

#51673 10GB External Drive #51688 14GB External Drive #51689 22GB External Drive VST

546899

556999

\$1,49999

256MB PC100 DIMM Have your RAM professionally installed by one of our factory-trained technicians, for only *30. Ask for #2214. See more Viking memory visit macmall.com. Prices are valid at time of press and are subject to change due to market fluctuations. Please call for most current pricing.

Order Any Time! Open 24 Hours! Order Today by 10pm EST— Get it Tomorrow by 10:30am!

-800-217-9492

o to 450MHz!





New Power Mac G4s!
Order# #52999 #53000 #53001
MHz 350MHz 400MHz 450MHz

#52999	#53000	#53001
350MHz	400MHz	450MHz
64MB	128MB	256MB
10GB	20GB	27GB
32X CD	DVD-ROM	DVD-RAM
N/A	Yes	Yes
56K	56K	N/A
\$1,594	\$2,494	\$3,494
\$64/month	\$100/month	3140/month

Call for Even Lower Prices!

MacMall.Com or AOL Keyword:
Mention your Priority Code: #ZMVVD013

RAM

Price Lease Price

Hard Drive Multimedia

Zip Drive Modem



Faster, Super Slim G3 PowerBooks up to an incredible 4

he new PowerBook G3s are the sleekest, fastest, best-equipped notebooks ever! With the high-

performance G3 processor, they out-perform comparable Pentium and Pentium II processor-based desk-

top systems, with go-anywhere, do-anything PowerBook convenience!

Cutting Edge Features at an Affordable Price!

Processor and Memory

- 333 or 400MHz PowerPC G3 processor fastest performance ever in a notebook!
- 66MHz system bus
- 512K or 1MB backside Level 2 Cache: 133 or 160MHz dedicated 64-bit backside bus
- Integrated floating point unit and 64K on-chip Level 1 cache (32K for data and 32K for instruction)
- 64MB RAM; 2 SO-DIMM slots support up to 384MB RAM

Storage

- Internal 4 or 6GB IDE hard drive
- 24X CD-ROM (#53003) or DVD-ROM drive (#53004) for use in expansion bay
- Removable 1.44MB floppy disk drive for use in expansion bay (sold separately)
- Hot-swappable expansion bay supports CD-ROM, DVD, Zip, SuperDisk or hard drive

Expansion & Networking Ports

- 2 USB ports, SCSI port, power adapter port
- Built-in 10/100BASE-T Ethernet
- RJ-11 modem port, 4Mbps Infrared (IrDA) port
- Support for a Zoom Video PC card
- PC Card Slot for one Type I or Type II card

Graphics, Video & Sound

- 14.1 inch (diagonal) display features built-in TFT XGA active matrix display, supporting millions of colors at 1024 x 768 resolution
- 8MB SDRAM video memory; supports millions of colors on external displays up to 21"
- 2D/3D graphics, through integrated ATI RAGE LT Pro video controller
- S-Video port
- 24-bit video output port (VGA-style connector)

- 16-bit CD quality stereo input/output
- Two built-in stereo speakers
- Internal omnidirectional microphone

Portability

Kensington cable lock slot and keyboard lock Includes one Lithium-ion battery for up to 5 hours of normal use; supports two batteries for as much as 10 hours of use (depending on configuration and usage)

Software (Pre-installed)

Mac OS 8.6, Apple File Synchronization, Apple Location Manager, Microsoft Internet Explorer, Microsoft Outlook Express, Netscape Communicator and FAXstf

Size and Weight

Width: 10.4"; Height: 12.7"; Depth: 1.7" Weight: 5.9lbs. (w/CD-ROM + battery installed)

NEW USB PowerBook G3 Series!

Order	MHz	RAM	HD	Cache	Drive	Modem	Display	Price	Lease
#53003	333	64MB	4GB	512K	24X CD-ROM	56K	14.1" Active Matrix	\$2,494	\$100
#53004	400	64MB	6GB	1MB	DVD-ROM	56K	14.1" Active Matrix	\$3,494	⁵ 140

Ask for details on our new low lease rates!

Call for Even Lower Prices!

IKING Upgrades for your COMPONENTS PowerBook G3!

#31440	64MB PowerBook G3	\$25099
#31442	128MB PowerBook G3	\$52999
#41979	128MB Low Profile	\$55999
#41978	256MB Low Profile	\$1,10499

Have your RAM professionally installed by one of our factory-trained technicians for only \$30. Ask for #2214. Visit our Web site: macmall.com for more Viking memory. Prices are valid at time of press & are subject to change due to market fluctuations. Please call for most current pricing.

4 Port USB Hub

This low cost USB solution gives you 4 powered USB ports to connect all your peripherals.







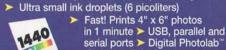


#47086 Apple Lithium-lon Rechargeable Battery



Epson Stylus
Photo 750 Printer!

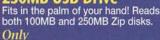
➤ 1440 x 720dpi, 6-color (PRQ**) Quickdry inks





Epson Stylus Photo 750 Printer 2**49**99 #44849

New! lomega® Zip® 250MB USB Drive



#52012



For more info visit macmall.com

Order Any Time! Open 24 Hours! Order Today by 10pm EST— Get it Tomorrow by 10:30am!

Product Your Choice!

stock now

Call now or visit macmall.com for details

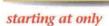
Limited time offer. Valid until 1/11/00.

Product Price	Exclusive Cash Savings	or .	Your Choice FREE	67	Player
\$850-999	¹ 25 Gift Cheque	or	Software	or	1249
\$1001-1599	150 Cash Back	or	Scanner	or	*199
\$1600-2499	\$100 Cash Back	or	Floppy drive	or	*149
\$2500-2999	1150 Cash Back	or	Zipº drive	or	199
\$3000-3499	1200 Cash Back	or	Tape drive	or	149
\$3500-4399	250 Cash Back	or	Printer	or	FREE
54400 +	300 Cash Back	or	CD-RW	or	FREE
	Free products of	gered are:	subject to change.		強し
	T			S	1

Authorized

New Slimmer and Lighter Design!

- > Super slim profile
- > Only 5.9lbs., nearly 2lbs. lighter than previous models!



#53003

Call for even lower prices!

Visit macmall.com for more



peripherals

(P) FISHAUF/Shifting Ground (1:1) Navigator Info Catalog Reseller + ×: п Color Brushes 51 44 41

up to

Access Floppies & SuperDisks!

The only solution for the new PowerBooks to access floppies!

Internal SuperDisk for NEW

PowerBook G3 \$21999

#47082 For more info visit macmall.com

Internal Zip Drive for the New PowerBook Gs

VST

on all online

orders totaling over \$500

Call for details. Free shipping is via UPS Ground for in the continental U.S. Offer ends 12/31/99.

Go to macmall.com

carrying case with any PowerBook

purchase! While supplies last.

> A \$60 Value



or AOL Keyword: Mac Mall

Mention your Priority Code: #ZMWD013

\$21990



If You Don't See it, Cal

MacMall has the best prices on USB peripherals for the iMac, iBook, PowerBook G3, Power Mac G3 and G4!





Order Any Time! Open 24 Hours!
Order Today by 10pm EST—
Get it Tomorrow by 10:30am!

1-800-217-9492





FILE Ships

Go to

on all online orders totaling over \$500

FREE SHIPPING

New FileMaker Pro 5 for Mac!

With FileMaker Pro 5 you can easily create, share and manage information and projects with colleagues over the Intranet.

Easily integrate with Microsoft Office Publish your databases on your Intranet



Be productive in minutes without learning programming Make it look the way you want

upgrade for only

#812611

Compatible

w/Win 98 CD

with OS 9

099*

#49917

*After \$30 upgrade rebate for Virtual PC

Aladdin

1.x and 2.x for DOS or Win 95 owners.

#812610 FileMaker Pro 5 for Mac \$23499

Virtual PC 3.0 is Here!

New Dreamweaver/ Fireworks 3!

upgrade

as low as

#52693 Upgrade for owners of both Dreamweaver and Fireworks.

#52699 Dreamweaver/Fireworks 3 upgrade for owners of either Fireworks or Dreamweaver

Dreamweaver/Fireworks 3

\$23999 \$38999





Over 50 NEW features

5099 #49794

Mac OS 9 is the ultimate upgrade the Internet and those who want to bel





New Virex 6.0

Now compatible with OS 9!

#52681





Adobe InDesign

Order today ar FREE Ph

National Geographic 110 Year Collector's Edition

Includes every article, picture and advertisement since 1888.

#49915





Buy both MacInTax Deluxe and State, and redeem the purchase price of MacInTax State via mfr. mail-in rebate in box.

only \$4995

#52944 MacInTax State CA

\$2795 #52947 MacInTax 32 Multi-State \$2795 Buy MacInTax Deluxe, MacInTax State and Quicken Deluxe together and SAVE! Call for details.

Quicken Deluxe 2000

Manage your personal financial situation using the power of the Web!

only \$3999 #48131

\$20 mfr. mail-ir upgrade rebate



Wall

Adobe InDesign

Stufflt Deluxe 5.5 provides Professional up to 20% better compression **Publishing** to make files smaller for faster as low as Internet transfers and to increase

hard disk space. oniv

New Stuffit

Deluxe 5.5

#52764 *Price reflects \$60 mail-in upgrade rebate for Stuffit and

Stuffit Deluxe \$30 mail-in rebate

The Future of

Adobe

#51307

Price reflects \$400 off the regular price if you own QuarkXPress,

Photoshop, Illustrator or PageMaker! Hurry offer ends 12/31/99!

#45249 Adobe InDesign Mac/PPC

#47478 Adobe Photoshop 5.5 upgrade \$114997

New Norton Utilities for the Mac! SYMANTEC.

Utilities

Version 5.0 is the safest way to repair disk problems and recover lost files.

AA 99 #48932

\$699

#48587 Norton AntiVirus 6.0 Mac After 140 mfr. mail-in rebate for previous users and owners of Num, VirusScan or Virex,

We do our best to be accurate, but occasionally mistakes occur. We are not responsible for any typographical, photographic or technical errors Products and packaging may differ from stock available at time of shipment; we reserve the right to substitute equivalent items.

Holidays! Games for the Oil



Madden NFL

2000

#51845

\$4399

Tomb Raider III **\$AA89** #51846

TADDEN

Star Wars Racer



Quake

Arena

\$3999

#47953

FLY!

Baldur's Gate \$4299 #51847





Buadom \$**29**99 #51735



Software & Accessories Buvers

Introducing the



or AOL Keyword: Mac Mall

Mention your Priority Code: #ZMWD013

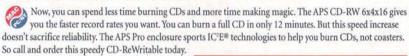




Why trust your work to

APS CD-RW 6x4x16

- Brand-new CD-ReWritable offers 50% faster record speeds than our best-selling 4x4x16
- 100% Coaster-Free Guaranteed









APS CD-RW 6x4x16 SCSI

Introducing data storage for the next millennium



LaCie FireWire 20GB Hard Drive

- Easiest connections ever hot swappable, no terminator, no device ID
- Up to 63 FireWire devices on one bus
- Ideal for personal video storage and editing, large-scale imaging/graphics

\$499.95



- Hot-swappable, for quick moves
- Includes Toast software

Hot-Swap CD-RW \$299.95

USB and Firewire Drives La Cie 10GB USB Hard Drive \$259.95 La Cie 20GB USB Hard Drive 389.95 La Cie USB CD-RW 299.95 Sony USB CD-RW Spressa 359.95

Sony USB CD-RW Spressa 359.95 Imation Superdisk Drive USB 149.95 VST USB Floppy Drive 89.95 VST 10GB Firewire Hard Drive 699.95

How to upgrade your hard drive without breaking the bank



APS Ultra 160m / Ultra 2 Wide LVD SCSI Drives

Model	RPM	BARE	APS Pro
APS I 9GB LVD	7200	\$309.95	\$379.95
APS Q 9GB Ultra 160m LVD	7200	309.95	379.95
APS ST 9GB LVD	7200	349.95	419.95
APS I 9.1GB LVD 10K	10000	489.95	559.95
APS Q 9.1GB Ultra 160m LVD 10K	10000	429.95	499.95
APS ST 9.1GB LVD 10K	10000	489.95	559.95
APS I 18GB LVD	7200	499.95	569.95
APS Q 18GB Ultra 160m LVD	7200	549.95	619.95
APS ST 18GB LVD	7200	539.95	609.95
APS I 18GB LVD 10K	10000	829.95	899.95
APS Q 18GB Ultra 160m LVD 10K	10000	729.95	799.95
APS ST 18GB LVD 10K	10000	749.95	819.95
APS I 36GB LVD	7200	1,099.95	1,169.95
APS Q 36GB Ultra 160m LVD	7200	1,029.95	1,099.95
APS ST 36GB LVD	7200	989.95	1,059.95
APS Q 36GB Ultra 160m LVD 10K	10000	1,359.95	1,429.95
APS ST 36GB LVD 10K	10000	1,289.95	1,359.95
APS ST 50GB LVD	7200	1,089.95	1,159.95

Drives listed above carry a five year warranty.

*Bare configuration does not include a mounting bracket. Intended as a replacement internal SCSI drive.



APS ST 36GB Ultra SCSI

- 7200rpm Barracuda with 36GB space
- Excellent value for upgrading home/ small business storage

Big drive for a small price

\$989.95

APS Ultra SCSI Drives			
Model	RPM	* Bare	APS Pro
APS ST 4GB	7200	\$199.95	\$269.95
APS ST 9GB	7200	299.95	369.95
APS I 18GB	7200	569.95	639.95

APS Ultra ATA Drives		
Model	RPM	Internal
APS 10GB ATA	5400	\$139.95
APS 20GB ATA	5400	199.95
APS 20GB ATA Drives listed above carry a on		



Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.

anything less than APS?

APS HyperDAT® IV

- Safeguard up to 24GB* of precious files on one tape
- 60MB/min. transfers get you up and running faster

Is your data outgrowing your backup system? Don't wait until disaster strikes and it's too late. Invest in the APS HyperDAT IV. This tape drive is like a life preserver for your personal and small business data. New DDS-4 technology has increased capacity by 67% over DDS-3 and shrunk your backup time in half. But the HyperDAT IV can read and write to your DDS-3 and even DDS-2 tapes, so migration is easy. Call today to keep your data safe.



Now, you can't afford not to backup

APS DLT8000 4.399.95 **APS AIT PLUS** 1.899.95 APS AIT II 3,899.95 APS AIT Plus Autoloader 3.999.95 APS DDS-3 Autoloader 2.999.95

APS Tape Backup

\$349.95

499.95

649.95

899.95

1.249.95

1,999.95

APS NS-8 (Travan NS-8)

APS NS-20 (Travan NS-20)

APS HyperDAT® II (DDS-2)

APS HyperDAT® III (DDS-3)

APS HyperDAT® IV (DDS-4)

Ships with Retrospect software.

APS DLT4000

Printers / Scanners

Printers

Epson Stylus Color 900 Printer	\$399.95
Epson Stylus Color 1520 Printer	499.95
Epson Stylus Color 3000 (Mac & PC)	1,249.95

Epson Stylus Photo 1200 USB Color Printer 499.95

Scalliers	
AGFA Duoscan Solo	\$2,459.95
Nikon Coolscan III (LS-30) (MAC)	979.95
Nikon Coolscan III (LS-30) (PC)	979.95
Nikon Coolscan 2000 (LS-2000)	1.795.95

Power Management

APC Surge Station Pro 8	\$32.95
APC Surge Station Pro 8 w/2 tel	37.95
APC Net 8 Surge Station	33.95
APC Net 8 Surge Station w/Net P	47.95
APC Line Conditioner,R-1250 APC	129.95
APC Line Conditioner,R-600 APC	99.95
APC BackUPS Pro 280S APC	134.95
APC BackUPS Pro 420S APC	219.95
APC BackUPS Pro 650S APC	269.95
APC BackUPS Pro 1000S APC	365.95
APC BackUPS Pro 1400S APC	459.95

CLOSEOUT SALE ~

APS Q 4.5GB Ultra Wide SCSI (External)	\$249.95
APS ST 8GB Ultra SCSI (Internal)	279.95
APS Q 4.5GB Ultra2 Wide SCSI (Internal)	259.95
APS I 9GB Ultra Wide SCSI (Internal)	299.95
APS Pro Enclosure (Closed Front 8-Bit)	49.95
APS Pro Enclosure (Closed Front 16-Bit)	49.95
APS ShortStack 2x9GB 10K rpm U2W	999.95
APS 18GB IDE (Internal)	549.95
Cobalt Qube 2 64MB DRAM 13GB	1,499.95
Iomega 1GB Jaz Cartridge (PC Format)	59.95

Wacom PL-400 LCD

- Like drawing right on your monitor
- 13.3" screen, pressuresensitive pen



Displays / Tablets

Sony Monitors	
Sony GDM-400PS 19"	\$699.95
Sony GDM-500PS 21"	1,099.95
Sony CPD-G400 19"	729.95
Sony CPD-G500 21"	1,199.95
LaCie Monitors	

LaCie electron19blue \$669.95 LaCie electron22blue 1.299.95

Sony LCD Displays Sony Multiscan CPD-L133 \$989.95 Sony Multiscan CPD-L150 1,249.95 Sony Multiscan CPD-L181 3,499.95

Canon ELURA DV Camcorder

- Palm-sized w/12x optical/48x digital zoom lens
- Better video quality than analog camcorders, VCRs
- Easiest way to grab and produce video

Lights, Camera, Action





LaCie electron22blue



■ 22" Natural Flat Diamondtron® CRT Award-winning, professional color

See the big picture

Includes Blue Hood

Digital Cameras

Digital Still Cameras	
Sony Digital Mavica MVC-FD83	\$699.95
Sony Digital Mavica MVC-FD88	899.95
Sony Digital Mavica MVC-FD91	947.95
Olympus C-2000 Zoom	879.95
Olympus D-620L	999.95
Nikon Coolpix 950 Digital Camera	929.95
Epson Photopc 800 Digital Camera	679.95
epson Photopc 750z Digital Camera	379.95

Digital Video Camcorders

Canon ULTURA	CALL
Canon ELURA	CALL
Canon XL-1	CALL
Canon GL-1	CALL

24 HRS/7 DAYS A WEEK

800-874-1











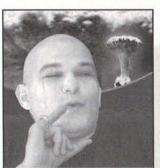


800.990.5695

www.BottomLineMac.com



Raise your hand if you want a new G4 from BottomLine!



(Not getting one.)



Introducing the new PowerMac G4 from Apple - so powerful it's classified as a weapon!

We will beat any price on any Apple® product!*

Apple PowerMac G4 - Choose your weapon! G4 450Mhz bundle for\$2749 G4 350Mhz, 400Mhz Call for the best prices! iMac, iMac DV, iMac DVSE .Call for the best prices!

Custom configurations available. Call to receive Soho-Store 2.0 e-Commerce software & instant rebate. Call for the best prices today! WE WILL NOT BE UNDERSOLD!

Call or visit our showroom for the complete line of Macintosh Computer Systems!



\$199

Rage Orion In Stock!*

ATI VR Rage/TV 128 w/NTSC TV 16MB VRAM PCI



Epson5700I USB Laser Printer

ProMax TurboMax Card

Firewire Drives 8Gb - 25GB



350MHz 400/450 Call

\$449

RailGun G4 Upgrades



\$17.99

w/the purchase

\$149

Stomp CD Labeler



\$266 Western Digital Expert 27.6GB IDE Drive



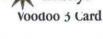
\$124

Add IDE Drives To ANY PCI PowerMac



\$639 500Mhz/1MB







Sonnet Crescendo 500MHz G3 Upgrade



from \$299



\$69.99 Use SCSI Devices On Your USB

\$179*



\$339





\$121

Iomega Zip Drive 100MB removable storage USB!



\$229 Seagate 22GB ATA/66 200rpm Drive



1440 Epson 740i Printer Color Inkiet * Price after rebate

Now Shipping!



Interview USB Video Capture Device







64MB PC100



UltraWide SCSI



Castlewood ORB Removable Storage Drive

Super CDR/CDRW Deals! Teac CDR58s 8x/24x CDR Drive\$319.99 Panasonic 8x/20x CDR Drive\$199.99 LaCie USB CDRW 8x\$319.99 Superior RAM Deals! Call for current memory prices\$Call

Storage Devices Quantum Atlas IV 7200rpm 9.1GB\$299 Quantum Atlas IV 7200rpm 18.2GB ..\$522 Quantum Atlas IV 7200rpm 36.4GB ..\$992 IBM Deskstar 20.2GB IDE ATA/66\$225 IBM Ultrastar 18ES 9.1GB Ultra2......\$309

IBM Ultrastar 18ES 9.1GB Narrow......\$309 IBM Ultrastar 18ES 18.3GB Ultra2.....\$519 Western Digital 27.6GB IDE ATA/66....\$299 Initio Miles Ultra2 PCI\$179.99 Adaptec SCSI CardsStarting at \$53.99 Magic Yamaha 64168 6X CDR-W \$279.99 G3. Daughter Card Upgrades

XLR8 G3 400Mhz/1MB 2-1\$509.00\$159.99 PowerLogix G3 250..... PowerLogix G4.....\$Call G3.ZIF Card Upgrades:

Railgun G3 466Mhz/1MB 2-1\$499.99

64Mb PC100 128Mb PC100 64MB Wallstreet .. Railgun G3 333 ZIF. XLR8 G3 466Mhz/1MB Newer G3 400Mhz/1MB 2-1\$599.99 Digital Cameras/Scanners

Nikon CoolPix 950 Canon Ultura.....Call for pricing!! Canon EluraCall for pricing!! Media 100 QX Software: Call or visit our Web Site! iMac DV Bundle Includes iMacDV 8 a Canon UlturaDV camcorder - a \$300 savings!

MacOS 9.0 Price after \$20 Apple rebate. Includes Housecall remote con trol software -a \$29.95 value! Only from BottomLine!



Panasonic 8x/20x CDR 8x/20xInternal CDR



*Confirmation of prices required. Apple products must be from an authorized Reseller, Valid only for items that BottomLine currently carries. Offer not valid for discontinued, special purchase, or lost-leader it Payment. No credit card surcharge. Corporate POs welcome, Tax: Texas residents add 8.25% sales tax. Prices: Items, prices and availability subject to change. Returns: Call for RMA number. Must be registered to a minimum 15% restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for credit. Bottom Line Distribution canne responsible for errors in typography or photography, Apple specs subject to change. Quatomer Service;512:485-4602, International Sales: Bottom Line Distribution is committed to the needs of international Mocintosh users. We discounted rates with DHL. 2 to 3 day delivery to most countries. Dealer inquiries welcome. Address: 115 bottom Line Distribution: WF 8-7 CST All Trademarks are the sole property of their respective on

Bottom Line Offers Business Leasing on all items we carry (orders over \$1000.00). Call today for details, or fill out a lease form online!



ww.pdisales.com

HIGH PERFORMANCE SPECIALISTS

FIRE WIRE



ProDirect is your FireWire Solutions **Headquarters**

DVD, CD/CDR

Plexwriter 820 \$499 CDR Drive Software Included

DVD RAM Drive External \$580 Yamaha

CRW6416 CDR Drive Toshiba 40x CD 2Mb Buffer 6x Recorder, 4x ReWritable, 16xReader \$299 Drive XM6401B \$135

MEMORY



C-CD Creator



APPLE CERTIFIED . HIGHEST QUALITY MEMORY LIFETIME WARRANTY . 24 HOUR REPLACEMENT

Blue Yosemite G3 168 pin SDRAM

32MB • 64MB • 128MB

Beige G3 168 pin SDRAM

32MB • 64MB • 128MB

iMac SODIMM 32MB • 64MB • 128MB

7200-9600. 5400-6400 168 pin 5vDIMM

16MB • 32MB • 64MB

www.pdisales.com/merchant/SCSI.htm

ACCELERATOR CARDS

a dudpiec				
PowerDomain 29	40UW	UP TO 40 MB/	Sec. \$23	E
Adaptec AHA293 PowerDomain 394	U PCI to	Ultra SCSI HD5	pin\$9	
PowerDomain 394	10 UPTO	40 MB/Sec	\$34	Ł
PowerDomain 294	10U2W	Card Only	5	
Adaptec AHA290	PCI to S	CSI 2 HD50 nin	- 80	1-

ATTO ATTO	ALTE DE LA
Express PCI	\$17
Dual Channel Express PCI	389
Express PCI LVD	* * *
Express PCI Ultra2/LVD Dual Channel	489

INITIO

Initio Miles UW ... Initio A100U2W PCI to Ultra 2/LVD UP TO 80 MR/Sec



www.pdisales.com/merchant/tape.htm

DAT	Storage	SPEEDY TAPE DRIVES IN	STOCK TODA
CAPACITY	MODEL	TRANSFER RATE	SALE
	STD28000	60 MB/Min.	595
24 GB	Sony 9000 DDS	3 120 MB/Min.	855
40 GB	Sony 9000 DDS Sony 10000 DDS	4 120 MB/Min.	1195
Daniel State Co.	The second		

DLT Tape Storage

30 GB	DLT2000XT	150 MB/Min.	955
40 GB	DLT4000	180 MB/Min.	1785
70 GB	DLT7000	600 MB/Min.	3545
80 GB	DLT8000	600 MB/Min.	4995

AIT Storage

CAPACITY	MODEL	TRANSFER RATE	SALE
50 GB	Sony SDX300c	6 MB/sec.	2145
100 GB	Sony SDX500c	6 MB/sec.	4195
APT autolog	description of the later of	H for Analysis	

RETROSPECT 4.0 MAC OR CHEYENNE WINDOWS (NT) SOFTWARE INCLUDED WITH ALL TAPE DRIVES

Seagate CHEETAH

9.1GB U2W \$425 18.2GB LP U2W

36.4GB U2W Seagate 9.1GB U2W

18.2GB LP U2W 36.4GB U2W

50GB U2W

Quantum ATLAS 10K Ulira 2 LVD 9.1GB (QM309100TN-LW)\$389 EXT: 18.2GB (QM318200TN-LW)\$665 \$745

MORE SCSI (ULTRAWIDE)

Includes 68/68 DaisyChain or 68/50 Cable and Termination

7200 rpm 512k 8ms Seek

RAID SYSTEMS

Seagate Barracudas 395

Seagate Barracudas 485

IBM DeskStar GXP \$ 565

ULTRASTAR 9.1GB U2W or Narrow \$269

18.2GB U2WOR NARROW \$468 36.4GB U2WOR NARROW \$914

ULTRASTAR 10,000RPM 18.2GB u2w (318200LW) \$683 Ext: \$783 36.4GB u2w (338400LW) \$1145 Ext: \$1225

Quantum ATLAS IV Ultra2 LVD 4.5GB (VIKING 34550N)\$195 \$255 9.1GB (QM309100KN-LW)\$274 \$354

18.2GBLP (OM318200KN-LW) \$468 \$548 36.4GB (OM336400KN-LW) \$919 \$999

36.4GB (QM336400TN-LW)\$1129 \$1209

Quantum Fireball 10.0GB **Quantum Fireball**

20.0GB **Quantum Fireball** 16.8GB IBM DeskStar 25.0GB

37.0GB IBM DeskStar \$ 567 5400 rpm 512k 9.5ms Seek Seagate Medalist 5 265 8.6GB 10,2GB Seagate Medalist 13.3GB

5400 rpm 512k 9.5ms Seek

Merc SCSI (NARROW) Includes 50/50 DaisyChain or 25/50 Mac System Cable

\$279 5 282 13.5GB **Quantum Fireball**

IBM DeskStar \$495

Seagate Medalist 17.2GB Seagate Medalist 5329

New Ultra 66DV DIGITAL VIDEO RAIDS

ULTRAC

40GB BARRACUDA 935 56GB BARRACUDA \$1065 Seagate

80 Day

DESKSTAR GP

15.2GB (25L2648) \$139 16.8GB (00K4073) \$151

20.3GB (25L2580) \$198

25.0GB (25L2652) \$238 37.5GB (31L9070) \$351

DESKSTAR GXP

14.4GB (31L9845) \$151

18.0GB (25L2659) \$198

22.0GB (25L2661) \$238 27.3GB (31L9058) \$266

34.2GB (31L9060) \$351

6.4GB (FB306400CX-A)\$98

10.2GB (FB310200CX-A)\$122

13.0GB (FB313000CX-A)\$131

20.4GB (FB320400CX-A) \$215

9.1GB (FB309100KA-A)\$134

13,6GB (FB313600KA-A)\$158

18.2GB (FB318200KA-A)\$214

0

FIREBALL CORONA

QuanturFIREBALL KATANA

NEW Mac IDE Accelerator

FOR ALL

New

IDE

Drives

0 Ame Sook

3

7200 rpm

Bms Sock

Quantum

SUSTAINED TRANSFER RATES UP TO 72MB/SECOND.. PINNACLE

All PowerRAIDs are Initialized, Speed Tuned, Tested and Bench Marked To ve Raid-Tuned Hard Drives aid Center Enclosures With Maximum Duty Power Supply, Tellon Shielded Cables, High



PowerRAID is on MEDIA 100's "Recommended Raids" List Call or visit our website for our complete line of Open System Architecture PowerRAIDs.

TRUEVISION

CHEETAH PowerRAIDs Seagate BARRACUDA PowerRAIDs

36GB PowerRAD FIXED: \$2413 REMOVABLE: \$2589 LEASE FOR: \$152/MO

72GB PowerRAID

REMOVABLE: \$3673 LEASE FOR: \$273MO FIXED: \$3489 LEASE FOR: \$255MO.

108GB Power RAID **FIXED: \$4900** REMOVABLE: \$5313

144GB PowerRAID REMOVABLE: \$6685 FIXED: \$6279 LEASE FOR: \$339MO

36GB PowerRAIDSB36 REMOVABLE: \$2129 LEASE FOR: \$115MO FIXED: \$1933

72GB PowerRAIDSB77 FIXED: \$2925 LEASE FOR: \$144MO. REMOVABLE: \$3129 LEASE FOR: \$154MO

100GB Power RAIDSB100 **FIXED: \$3064** REMOVABLE: \$3259

150GPowerRALDSBILL FIXED: \$4300 REMOVABLE: \$4589

Multi-platform

Windows 95/98/NT, Apple MacOS, UNIX

•NT Servers & Clusters •Internet/Intranet Servers •Non-Linear Recording Workgroups

Service t Performance t Price t Always



www.pdisales.com

Quickly find and order it now on our website!

10830 Nesbitt Ave. South Bloomington, MN 55437 WDO1.00 ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. RETURNED ORDERS ARE SUBJECT TO A RESTOCKING FEE. INTERNATIONAL CUSTOMERS PAY ALL SHIPPING CHARGES ALL SHIPPING CHARGES ARE NON-REFUNDABLE TO RETURN MERCHARDISE CALL FOR AR RIMA MUNIEER. ALL RIMAS MUST BE RETURNED WITHIN 10 BUSINESS DAYS OF RESUMACE CUSTOMERS ARE RESPONSIBLE FOR SHIPPING CHARGES TO RETURN PRODUCT

NewPowerRAID

RAID Level 0,1, & 5 40MB/sec transfer rates Host independent Mac/NT/S

sharing hot swapable power supplies & cooling fans Up to 128MB cache



SERVER RAID

BACR \$3335 \$3585 100 GB ..\$3850 125GB .. \$4535 140GB \$4225 170GB .. \$4905

Godaphe ULTRA HOT CONNECT 8945

Plug your FireWire equipped Comero right into your computer to easily control digital video and stills. NTSC and PAL formats compatible \$595 RE AND ULTRAWIDE SCSI BOTH ON ONE CARDI

MAC \$1795, WIN NTS 1795 MEDIA 100 QX MEDIA 100 QXC

MEDIA 100 LE "WITH DRIVE or PowerRAID PURCHASE 5295

PINNACLE Miromotion DC30+

Your right to selection







Grape

CDW 190114

Lime CDW 190123



iMac™

iMac DV Graphite

Includes:

- 400MHz PowerPC G3 processor
- 128MB SDRAM
- 13GB hard drive

CDW 190128

Blueberry CDW 190108

Strawberry CDW 190120

Tangerine

400MHz PowerPC G3 processor

- 15" display, 13.8" viewable image size
- 512KB backside Level 2 cache
- 64MB SDRAM
- · 10GB hard drive
- 4X Max DVD-ROM
- 56Kbps (V.90) modem
- 10/100BASE-T Ethernet



Authorized Catalog Reseller

Apple® AirPort

Wireless Internet connection for iBook

Apple AirPort Card Apple AirPort

Hardware Access Point \$298.68 CDW 179142

\$96.97 CDW 179146



Apple[®] iBook™

- 300MHz PowerPC G3 processor
- 512K backside Level 2 cache
- 32MB RAM
- · 3.2GB hard drive
- 24X Max CD-ROM drive • 56Kbps (V.90) modem
- 10/100BASE-TX Ethernet
- Built-in 2D/3D ATI RAGE graphics with 2X AGP
- Mac OS 8.6
- 12.1" active-matrix SVGA display

Tangerine \$1596.00 CDW 186132

Blueberry

\$1596.00 CDW 186133 *Included in box; call your CDW account manager for details (while supplies last)

Power Macintosh G4 Series



- 1MB backside cache
- 100MHz system bus
- 64MB SDRAM
- 10GB hard drive
- 32X Max CD-ROM
- 56Kbps (V.90) modem

\$1594.00 CDW 191284

- 400MHz PowerPC G4 processor
- · 1MB backside cache
- . 100MHz system bus
- 128MB SDRAM
- · 20GB hard drive
- 5X Max DVD-ROM
- 100MB Zip drive
- 56Kbps (V.90) modem

\$2494.00

- 450MHz PowerPC G4 processor
- 1MB backside cache
- 100MHz system bus
- 256MB SDRAM
- · 27GB hard drive
- 5.2GB DVD-RAM
- . 100MB Zip drive
- 56Kbps (V.90) modem

\$3494.00 CDW 191291





Know your options



Apple Mac OS 9

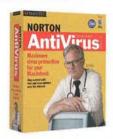
CDW 183126





ViewSonic E771 monitor 17" flat square display, 16" viewable image size

\$229.56 CDW 98516



Adobe Publishing Collection

\$282.29

CDW 192424

Symantec Norton AntiVirus V6.0

\$68.14

CDW 178354

Symantec Norton Utilities V5.0

Includes: PageMaker® V6.5 Plus, Photoshop® V5.5, Illustrator® V8.0

Adobe® Publishing

and Acrobat® V4.0 \$997.64

\$93.23

CDW 178357

Collection

CDW 174166



Lexmark Optra M410 Laser printer

- 74MHz processor
 Adobe PostScript Level 3
 USB and parallel connectivity

\$668.23

CDW 187043

MONITORS

MOMITORS
APPLE Apple Studio Display 17*
(16" view) 0.25mm AG
(19.8" view) 0.525-0.27mm AG
(15.1" view)
MITSUBISHI
Diamond Pro 900U 19" (18" view) 0.25-0.27mm AG
NEC
MultiSync A500+ 15" (13.8" view) 0.28mm178.65 MultiSync A700+ 17" (16" view) 0.28mm289.81
MultiSync E750 17" (16" view) 0.25mm428.85 MultiSync FP950 19"
(18" view) 0.25-0.27mm AG
PHILIPS/MAGNAVOX 105S 15" (14" view) 0.28mm
105S 15" (14" view) 0.28mm
109S 19" (17.9" view) 0.26mm389.86
SONY
110GS 15" (14" view) 0.25mm
500PS 21" (19.8" view) 0.26mm1166.60
VIEWSONIC
GS771 17" (16" view) 0.27mm
G790 19" (18" view) 0.26mm
P810 21" (20" view) 0.25mm
G810 21" (20" view) 0.25mm
PT813 21" (20" view) 0.28mm AG
P815 21" (20" view) 0.25mm919.99

VIDEO BOARDS ATI TECHNOLOGIES

ATI RAGE ORION 16MB169.87
ATI NEXUS 128 32MB
ATI XCLAIM VR 128 16MB TV199,32
IX MICRO
ix3D Game Rocket 16MB PCI 229.50 Road Rocket PC Card 229.01
COMMUNICATIONS
SCOM/II C DODOTICO

Sportster 56K Faxmodem external109.01 GLOBAL VILLAGE

VIK	IN	G		
Modem ex	dem	al	USB	e mariane

Viking 56K V.90 N 119,75 **DATA STORAGE** CASTIEWOOD

Orb 2.2GB EIDE Internal Drive	199.00
Orb 2.2GB SCSI Drive	
Orb 2.2GB USB Drive	
Orb 2.2GB Disk	29.95
IMATION	
USB 120MB SuperDisk drive	149.99
IOMEGA	
Zip drive 100MB external USB	
Zip 100MB disk, 3-pack	39.95
Zip drive 250MB external SCSI	

ZID drīve 250NB external SCSI	169.9
Zip drive 250MB external USB	179.9
Zip 250MB disk, 4-pack	69.9
Jaz drive 2GB internal	
Jaz drive 2GB external	
Jaz disk 2GB, 3-pack	
LACIE 20GB external FireWire™ hard drive 4X4X16 CD-RW external WPCI SCSI card. CD-RW drive external USB.	315.2
DVD-RAM external	
2.6GB DVD-RAM disc single sided	32.0
5.2GB DVD-RAM disc double sided	42.2
4GB external SCSI hard drive d2 case	329.0

5.2GB DVD-RAM disc double sided 42.28 4GB external SCSI hard drive d2 case 329.00 9.1GB external SCSI hard drive d2 case 429.00 9.1GB external SCSI hard drive d2 case 649.00 18GB external SCSI hard drive d2 case 799.00 3GGB external SCSI hard drive d2 case 799.00 10GB external SCSI hard drive d2 case 1849.00 10GB external USSB hard drive 445.00 20GB external USSB hard drive 445.00	
QUANTUM 9.1GB Atlas 10K SCSI hard drive 429.89 18.2GB Atlas 10K SCSI hard drive 727.32	

	SONY
Sony Spressa i.LIN	IK 4X4X24 CD-RW439.39
SC	ANNERS

AGFA

SnapScan 1236S	.199.00
SnapScan 1212U for the iMac	.129.00
DuoScan T1200	686.27
SnapScan Touch	126.78
FDCOM	

Ι	3	P	5	3	C)	ľ	۱

Periection 610	.149	, UI
Perfection 636	299	.01
Perfection 636U	199	.00
Perfection 1200U	249	.00
Perfection 1200S SCSI	299	.00
Perfection 1200U Photo	349	.00
Expression 800 Executive	699	.00
Expression 800 Artist		
Expression 800 Professional	999	.00
	400	

MICROTEK SlimScan C6 ScanMaker X6 USB ScanMaker X6EL ScanMaker 4

NIKON
CoolScan III LS 30 film scanner
Super CoolScan LS 2000 film scanner

POLAROID

Polaroid SprintScan 4000	1739.93
UMAX	
Astra 1220S	149.00
Astra 2000U	119.00
Astra 2100U	149.00
Astra 2200	199.00
Astra 2400S	299.00
Powerlook III	895.00
Powerlook III with transparency adapter.	1195.00
Mirage II Duo Design	1995.00

PRINTERS

PDCOM

PLOOM	
Stylus Color 740	199.00
Stylus Color 740i	229.00
Stylus Color 1520	499.00
Stylus Color 3000	1299.00
Stylus Pro 5000	2995.00
Stylus Color 900G	429.00

	HEWLETT-PACKARD)		
HP	DeskJet 812C	14	9.	ĺ
HP	DeskJet 882C	24	9.	ĺ
HP	LaserJet 895Cse	29	9.	ĺ
HP	LaserJet 4050N	139	7.	٤
HP	Laser let 8000DN	295	9	į

CDW® DIRECTORY

PC sales	800-800-4239
Mac sales	800-509-4239
Corporate sales	800-280-4239
Corporate software sales	800-294-4239
Government and Education sales	800-808-423
Networking sales	800-377-4239

CDW® TELEPHONE HOURS

Sales

Sales
Monday-Friday 7 a.m.-9 p.m. CT
Saturday 9 a.m.-5 p.m. CT
Tech Support/Returns for Customers
800-383-4239
Monday-Friday 7 a.m-9 p.m. CT

DIGITAL IMAGING

AGFA

ePhoto 780C digital camera	197.9
ePhoto CL30 digital camera	339.7
ePhoto CL50 digital camera	598.9
EPSON	
PhotoPC 650 digital camera	349.0
PhotoPC 750Z digital camera	599.0
PhotoPC 800 digital camera	699.0
PhotoPC 850Z digital camera	799.0

KODAK	
DC220 Zoom Camera	699.00
DC215 Zoom Camera	399.00
DC215 Millennium Zoom Camera	499,00
DC260 Zoom Camera	899.00
DC200 Plus Digital Camera	399,00
DC240 Zoom Digital Camera	499.00
DC265 Zoom Digital Camera	899.00
DC280 Zoom Digital Camera	799.00
DC290 Zoom Digital Camera	

NIKON

		camera	898.97
	(OLYMPUS	
Olympus D	-340R	digital camera	299.95
Ohammun P	450 Te	on digital samora	400 05

Olympus D-450 Zoom digital camera . Olympus D620L digital camera Olympus C2000 Zoom digital camera. Olympus C-2500L digital camera...... SONY

Sony Mavica FD91 digital camera Sony Mavica FD73 digital camera Sony Mavica FD83 digital camera Sony Mavica FD88 digital Camera

NOVUS VISA



TICKER SYMBOL. COWC D & B rated SAI Dws 16-782-7952
Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Shipping and handling charges apply; please ask your CDW account manager for details. Before returning any product, you must obtain an RMA number. Non-detactive returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices, products and offers, CDW reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes, errors in advertisements or other setemating oricumstances. All trademarks and registered trademarks are the sole property of their respective owners.

All products sold by CDW are third party products and are subject to the warranties and representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, CDW makes no representation or warranty with respect to the Y2K compliance of products sold.

56K modems are capable of 56Kbps downloads, however, current regulations limit

download speed to 53Kbps. Internet connectivity requires access services from an Internet access provider. Contact your local access provider for rates, terms and conditions. ©1999 CDW® Computer Centers, Inc. 200 N. Milwaukee Avenue, Vernon Hills, IL 60061 MW5174B 1/00



Computing Solutions Built for Business™ www.cdw.com 800-509-4239



BEST BUY AWARD WINNER!

CHECK OUT OUR UNBEATABLE MAC DEALS AT HTTP://WWW.MEGAHAUS.COM/MAC



OUR BEST BUYS ON CD RECORDERS!

EACH CDR DRIVE WILL INCLUDE TOAST MASTERING SOFTWARE, AND 5 FREE DISKS!

> Evt Int

CD RECORDABLE Includes 5 Free Re	cordable L	Disks!
4x12 Plextor mechanism, caddy/tray load, 2MB buffer	\$309	\$369
6x24 Teac mechanism, tray load, 2MB buffer	\$309	\$369
8x20 Sanyo mechanism, tray load, 2MB buffer	\$289	\$349
8x20 Plextor mechanism, tray load, 4MB buffer	\$399	\$459
8x24 Teac mechanism, tray load, 2MB buffer	\$359	\$419

CD REWRITABLE Includes 5 Free ReWritable Disks!

tray load, 2MB buffer	\$229	\$209
4x2x20 Plextor mechanism, tray load, 2MB buffer	\$299	\$359
6x4x24 Ricoh mechanism, tray load, 2MB buffer	\$279	\$339
8x2x20 Plextor mechanism, tray load, 2MB buffer	\$429	\$489
8x2x20 Sanyo mechanism, tray load, 2MB buffer	\$349	\$409

Stomper CD label kit only \$29 with CD-R drive!

13.3GB

17.2GB

20.4GB

28.0GB

5400

5400

7200

7200

Seagate

	4.5GB	7200	512K	ST34520N	\$190
	9.1GB	7200	512K	ST39140N	\$293
	ULTRA	-2 SCSI			
	9.1GB	7200	1MB	ST39175LW	\$317
	9.1GB	10,000	1MB	ST39103LW	\$432
	9.1GB	10,000	4MB	ST39103LW4	\$565
	18.2GB	7200	1MB	ST318275LW	\$505
	18.2GB	10,000	1MB	ST318203LW	\$675
	18.2GB	10,000	4MB	ST318203LW4	\$699
	36.4GB	7200	1MB	ST136475LW	\$885
	36.4GB	10,000	1MB	ST136403LW	\$1111
	50.1GB	7200	1MB	ST150176LW	\$955
	IDE UI	tra ATA	166		
	4.3GB	5400	256K	ST34311A	\$92
l	6.4GB	5400	256K	ST36421A	\$104
l	8.6GB	5400	256K	ST38421A	\$115
	10.2GB	5400	512K	ST310232A	\$127

512K

512K

512K

512K

ST313032A

ST317242A

ST320430A

ST328040A

\$135

\$152

\$210

\$278

IVICICION						
IDE UI	tra AT	A/66	•			
6.5GB	5400	2MB	M90650D	\$104		
6.5GB	5400	2MB	M90683U	\$Call		
10.0GB	7200	2MB	M91024U	\$150		
13.6GB	5400	2MB	M91360D	\$131		
13.6GB	7200	2MB	M91366U	\$Call		
20.4GB	5400	2MB	M92040D	\$201		
20.4GB	7200	2MB	M92049U	\$Call		
27.2GB	5400	2MB	M92720D	\$246		
27.2GB	7200	2MB	M92732U	\$Call		
2	.5"	IDE	LAPTO	P		

4.3GB	8.45mm	Toshiba	MK4313MAT	\$159
6.4GB	8.45mm	Toshiba	MK6411MAT	\$199
10GB	12.5mm	Toshiba	MK1011GAV	\$310
12.1GB	9.5mm	Toshiba	MK1214GAP	\$Call
18.1GB	12.5mm	Toshiba	MK1814GAV	\$Call
6.0GB	9mm	IBM	DA206000	\$235
9.0GB	9mm	IBM	DA209000	\$345
12.0GB	9mm	IBM	DA212000	\$379
15.0GB	12mm	IBM	DA215000	\$535
18.0GB	12mm	IBM	DA218000	\$555
25.3GB	17mm	IBM	DA225000	\$635
We carr	y more er	closures	for drives tha	n any-
body. Fr	om single	2.5" drive	cases to 20 full	height

controllers for Macs. Call us with your needs. We are committed to being the #1 Source for hard drives for Macintosh. If you need a drive or drive accessory not listed

RAID ready towers. We also stock a full line of

pricing and availability. Nobody beats our deals.

100MB Zip (ZIP100USB)	\$125
USB to SCSI adapter (USBSCSI)	\$75
SuperDisk drive, 120MB & floppy (USBLS120)	\$152
Floppy Drive (USBFLOPPY)	\$95
8GB Hard Drive (USB8GB)	\$215
12GB Hard Drive (USB12GB)	\$295
16GB Hard Drive (USB16GB)	\$365
USB Case for IDE hard drive (USBCASE)	\$85
Call about new USB CD Rewritable!	

63



Upgrades for the new G3 Mini Tow Macintosh computers. Adaptec PCI SCSI card (A2906E) \$65 20GB Hard Drive (M92040D)

We are the #1 Source in the US for multidrive tow ers. Call us with your specifications & we can build a customer tower for your G3. Need a 15 drive tower with CDs, CDRs, CDR-Ws, Tape drives, and hard drives? NO PROBLEM at MegaHaus!

HOT SELLERS

Drive with Toast. ΥΑΜΑΗΑ Direct CD. 1 Free CD-RW disk

6x4x16 CD-RW Drive

Internal (YCRW6416M) \$209 \$269 External (YCRW6416MX)

Fargo InkJet CD Color Printer (CDPRINTER) \$999 Adaptec Ultra Wide PCI controller (A2940MUW) \$275 Adaptec Ultra-2 PCI controller (A2940MU2W) \$359 Toshiba SCSI 5X DVD ROM (SDM1201) \$129

CD RON

· SCSI ·

· WIDE SCSI ·

· IDE ·

CRMCFX48X 48X

· CD CHANGER

Pioneer 24X 6 Disc external SCSI DRM6324X \$395

4mm DAT

PX32TS (tray) 32X

PX32CS (caddy) 32X

32X

40X

40X 85ms \$87 50

40X 85ms \$105

52X 90ms \$169

40X

32X 85ms

40X 75ms \$55

40X 79ms \$52

48X 90ms

52X

Seagate STD24000N

Sony DDS-3 SDT9000AI

Seagate STD224000N

HP DDS-3 C1554AI

Seagate STA2701W

EXABYTE 8mm DAT •

· QUANTUM DLT ·

DLT4000

DLT7000

DLT8000

5.2GB SCSI-2 int. 4MB buffer(76-5200) \$1459

5.2GB SCSI-2 int. 4MB buffer(SMOFSSI) \$1439

ELIANT820

EXB10H External

EXB8900

Seagate STL496000N

HP C5648A 6 tape load

Sony SDT7000AI

HP C1599AT

Seagate DDS-2 STD28000N \$535

Sonv DDS-4 SDT10000AI \$1029

85ms

85ms \$95

85ms \$79

85ms \$145

85ms \$120

65ms \$55

90ms

\$98

Be Y2K Safe

\$422

\$519

\$569

\$679

\$699

\$729

\$1939

\$2159

\$1999

\$1299

\$2119 6

\$2539

\$1649

\$4355

\$4579

\$109

\$309

\$315

\$80/77/75

\$85/80/77

CD532S

CDR3010

XM6401B

PX40TSUW

CD532F

CDR3000

XM6602B

CD48X

UCR412

Capacity Native-Compressed Max. Speed

66MB/min

66MR/min

90MB/min

88MB/min

144MB/min

132MB/min

120MB/min

288MB/min

360MB/min

48MB/min

120MR/min

120MB/min

360MB/min

60MB/min

180MB/min

600MB/min

600MB/min

100MB Zip Ext SCSI

2GB Jaz Internal SCSI

2GB Jaz External SCSI

1GB Jaz disk 2-4/5-9/10+

2GB Jaz disk 2-4/5-9/10+

Maxoptix Magneto Optical

Sony Magneto Optical

PX40TS

UCR415

Teac

NEC

Plextor

Plextor

Toshiba

Kenwood

Plextor

Plextor

Toshiba

Mitsumi

Memorex

Teac

NEC

2-4GB

4-8GB

4-8GB

4-8GB

12-24GB

12-24GB

12-24GB

20-40GB

25-50GB

48-96GB

72-144GB

7-14GB

20-40GB

70-140GB

20-40GB

35-70GB

40-80GB

Iomega

DVD RAM
Toshiba SCSI DVD RAM drive (SDW1111) Panasonic SCSI DVD RAM drive (LFD103U) \$539 Mac DVD RAM driver software (DVDSFTMAC) \$59 \$539 DVD RAM media (DVDRAMDISK)

We can custom configure a RAID system to your exact needs. Call one of our RAID experts at 800-786-5653. Here are a few of our popular RAID components.



Noi

50 100

5 F

20

50

100

S

Enclosure holds 3 Hot Swappable SCA drives \$279 (SCA3DR-LVD) INTERNAL ADD \$100 FOR EXTERNAL

Media Pricing....

8

5

Beats

EDIA

· CD RECORDABLE MEDIA · available

Nobody Beats MegaHaus for C	D media. Large	r quantities o
· CD Media ·	Max Speed	
5 Pack [CDR74B-5]	4x	\$8
20 Pack [CDR74B-20]	4x	\$23
50 Pack [CDR74B-50]	4x	\$57
100 Pack [CDR74B-100]	4x	\$99
5 Pack [CDR74-5]	8x	\$10
20 Pack [CDR74-20]	8x	\$30
50 Pack [CDR74-50]	8x	\$73
100 Pack [CDR74-100]	8x	\$139
CD REWI	RITABLE M	EDIA .
5 Pack [CDR74WB-5]	4x	\$12
20 Pack [CDR74WB-20]	4x	\$45
50 Pack [CDR74WB-50]	4x	\$99
100 Pack [CDR74WB-100]	4x	\$159
5 Pack [CDR74W-5]	4x	\$35
20 Pack [CDR74W-20]	4x	\$99
50 Pack [CDR74W-50]	4x	\$239
100 Pack [CDR74W-100]	4x	\$479
· CD-R PRIN	TABLE SUI	RFACE .
5 Pack [CDR74PB-5]	4x	\$9
20 Deal copperant act	Acc	022

ack [CDR74PB-5]	4x	\$9
Pack [CDR74PB-20]	4x	\$33
Pack [CDR74PB-50]	4x	\$59
Pack [CDR74PB-100]	4x	\$109
ack [CDR74P-5]	8x	\$15
Pack [CDR74P-20]	8x	\$59
Pack [CDR74P-S0]	8x	\$99
0 Pack [CDR74P-100]	8x	\$189
· CD RECORDABLE	PLATI	NUM MED

Pack [CDR74PA-5]	8x	\$11	>
0 Pack [CDR74PA-20]	8x	\$43	2
0 Pack [CDR74PA-50]	8x	\$75	ĕ
00 Pack [CDR74PA-100]	8x	\$139	
PTICAL MEDIA			-
ize & Description	1-4	5-9	10+
28MB, 3.5", 512K	\$13	\$9	\$7
30MB, 3.5", 512K	\$14	\$10	\$8
40MB, 3.5", 2048K	\$21	\$17	\$15
.2Gig, 5.25", 512K	\$25	\$23	\$21
.3Gig, 5.25", 1024K	\$26	\$24	\$22
.6Gig, 5.25", 1024K	\$33	\$29	\$27
.2Gig, 5.25", 2048K	\$70	\$68	\$64
• BACKU	P TAP	ES ·	

4mm DAT 90M	pack w/clean	\$20 Limit	ed Qty #DAT90N
4mm DAT 120M	\$14	\$12	\$9
4mm DAT 125M	\$27	\$23	\$20
8mm DAT 112M	2 pack \$10	Limited Qty	#DATHMM112M
8mm DAT 160M	\$16	\$14	\$12
TR4	\$29	\$27	\$25
TPF	\$47	445	\$42

MEDIA SALE 5-9 10-49 50+

DLTIII 10-20GB	\$36	\$34	\$30	\$29	
DLTHIXT 15-30GB	\$39	\$36	\$34	\$33	
DLT IV 20-40GB	\$69	\$67	\$65	\$64	
		-	-		

Quantum

ULTRA 160/m SCSI New SCSI interface will transfer 160MB/sec on new controllers. Drives will work on older SCSI, Ultra Wide, Ultra-2 controllers. 7200 KN309100LW \$289 9.1GB 2MB 9.1GB 10,000 2MB TN309100LW 18.2GB 7200 10,000 2MR KN318200LW \$489 2MB TN318200LW 18.2GB \$659 36.4GB 7200 2MB KN336400LW 36.4GB 10,000 2MB TN336400LW \$1129 IDE Ultra ATA/66 KA309100A 9.1GB 7200 512K

13.6GB 7200 512K KX313600A \$149 18.2GB 7200 KA318200A \$219 512K We are the #1 source for Quantum hard drives. Check us out at

www.megahaus.com/quantum for the best deals around on Quantum.

ULTRA SCSI 2MB

IBM309170N \$265 9GB 7200 18.2GB 7200 2MB IBM318350N WID IBM309170W \$265 9GB 7200 2MB 18.2GB 2MB IBM318350W 7200 IBM309170U2 \$265 9.1GB 7200 2MB IDMVS9U2 2MB 9.1GB 10,000 \$425 IBM318350U2 \$475 18.2GB 7200 2MB 18.2GR 10,000 2MB IDMVS18II2 \$689 36.4GB IDRHS36U2 \$899 7200 4MB 36.4GB 10,000 2MB IDMVS36U2 \$1029

THE TH 9.1GB 2MB IBM9GXP \$125 7200 13.5GB 2MB 512K IBM13GXP \$145 10 0CR 7200 2MR IBM20GXP \$235 2MB 20.3GB 5400 IBM20GP \$195 2MB 22.0GB 7200 IBM22GXP 25 0GR 5400 2MR IRM25GP \$235 27.3GB 2MB IBM27GXP \$255 7200 34.2GB 7200 2MB IBM34GXP \$345 37.5GB 5400 2MB IBM37GP \$345

// V ESTERN DIGITAL IDE

512K WDAC64AA \$110 6.4GB 5400 8.4GB 5400 512K WDAC84AA \$127 9.1GB 7200 2MB WDAC29100 10.2GB 5400 512K WDAC102AA \$133 13.0GB 5400 512K WDAC136AA \$149 2MB \$155 13.6GB WDAC136BA 7200 17.2GB 5400 512K WDAC172AA \$194 20.5GB 5400 512K WDAC205AA \$199 WDAC205BA 20.5GB 7200 2MB \$253 27.3GB 7200 2MB WDAC273BA

Be Y2K ready! Check out megahaus.com for the latest products to protect your valuable data! We appreciate your business!

here, we probably have it. Call for

Nobody has more drives.

-800-786-1184 Sales lines open: M-F 8-8 Sat 9-3 CST

www.megahaus.com

Secure ordering . Daily Specials . #1 Drive Store on the Web!



2201 Pine Drive, Dickinson, Texas 77539 (281)534-3919 FAX (281)534-6580

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging, Defaced items may not be returnable. No refunds on software or special orders (items not listed in ad.) All Frundrus subject to treatocking fee. All trademarks are registered trademarks of their respective companies. Personal checks held for dearance. We reserve the right to return any safe for any reason. Bundle prices good only if sold at ad price. All warranties listed are manufacturer's warranty only, 01999 MegaHaus Inc.





Newer Technology

uDrive USB floppy Drive

◆For use with the iMac & other USB-equipped computers from Apple ◆ Driver software included (NWT 7USBD000)

Entrean MAC-HUB-4U 4 Port iMac USB Hub CENT MACHERAID \$59.99

Entregg MAC-HUB-7U 7 Port iMac" USB Hub \$89.99 CENT MACHERZIES

TDK CyberExpress 5614 V.90 56K PCMCIA \$99.99 Madam (TDV HALADOAN)

Scanners



Canon CanoScan* FB 12005 SCSI Interface Flatbed Scanner

\$29999 (CAN FB1200SDUO) Agfa USB SnupScan 1212u (Translucent Blue For Mac) \$129.99 (AGF SNAP1212UB) UMAX Astra 24005 Desktop Color Flatbed \$299.99 nner (UMX AST2400SDUO)..... Minolta Dimage Scan Dual (PC/MAC Film Scanner) (MIN DIMAGEDINAL)

Microtek ScanMaker 4 36-Bit Dval Med Color Scanner (MTK SCANMAKER4)\$599.99

Networking



Netgear DS-108

10/100 MBPS Dual Speed Hub

*8 autosensing ports *Plug & play *Compact *Full
10/100 MBPS connectivity *Vista network ports with
LEDs *Mix & match 10/100 on same network \$13999 (NIG DS108)

> Vetgear DS-116 10/100Mbps Dual Speed Hub

•16-ports •Dual speed

\$229.99

Macintosh[®] Software

Adobe Press Ready

•The professional printing & proofing tool for color inkiets CD-ROM for Mac



ADM PRESSO

MacOpener® 2000 For Windows® by DataViz® (DAI MICOPENZK) \$49.95 \$49.99

Print Office 2000 by Corel (CRM PRINT2K-C) ... \$59.99

Mac OSO \$89.99 by Apple (APP 059-0)...

Power Print (5.0) USB-Parallel \$89.99 by Infowave (IFA PPUP) ...

Painter (6.0) Upgrade

FileMaker (5.0) by FileMaker (FMM FILEMAKES-O)







Apple® Power Mac" G4/400

400MHz PowerPC™ G4 processor with Velocity Engine™
 128MB SDRAM •20GB HD •DVD •56K V.90 modem

•6MB VRAM •10/100BASE-T •Monitor sold separately

40099 Original Price

40000 * CompuServe Rebate

128/20GB/DVD/100MB Zip™ Drive MiniTower

INTRODUCES BLAZING NEW

Apple® Power Mac" G4/350

64/10GB/32x-CD/MiniTower 350MHz PowerPC™ G4 processor with Velocity Engine™
 64MB SDRAM •10GB HD •32x CD •56K V.90 modem

•6MB VRAM •10/100BASE-T •Monitor sold separately 50099 Original Price

40000 * CompuServe Rebate

\$ 110099 FINAL COST (APP M7826LL/A) \$1599.99 Without CompuServe!

pple® Power Mac" G4/450

256/27GB/DVD-RAM/100MB Zip™ Drive MiniTower •450MHz PowerPC" G4 processor w/ Velocity Engine" •256MB SDRAM •27GB HD
•5.2GB DVD-RAM w/ DVD-Video playback •6MB VRAM •10/100BASE-T •Monitor sold separately

349099 Original Price 40000 * CompuServe Rebate

300099 FINAL COST

\$3499.99 Without CompuServe!

(APP M7825LL/A)

POWERPC AND THE POWERPC LOGO ARE TRADEMARKS OF INTERNATIONAL BUSINES MACHINES CORPORATION, USED UNDER LICENSE THEREFROM.

NEW:



...AND THESE NEW iMac™ COMPUTERS!

Apple® Power Macintosh® G3/iMac"/350

64/6GB/24x CD All-In-One Computer

•350MHz PowerPC G3 processor •64MB SDRAM •66B HD •24x CD-ROM •ATI RAGE 128 VR 2D/3D with 8MB VRAM •10/100Base-T •56K modem •2 USB ports •15" display •Blueberry

\$99999 Original Price - \$40000 * CompuServe Rebate

0099 FINAL COST

(APP M7469LL/A) \$999.99 Without CompuServe!

pple® Power Macintosh® G3/iMac**/400

64/10GB/4x DVD All-In-One Computers

•400MHz PowerPC 63 processor •64MB SDRAM •10GB HD •4x DVD •ATI RAGE 128
VR 2D/3D with 8MB VRAM •10/100Base-T •56K modem •15° display •Blueberry, Tangerine, Grape, Strawberry & Lime

120099 Original Price 40000 & CompuServe Rebate

0



Say hello to iBook

0

YOUR CHOICE!

\$ 80099 EACH - FINAL COST

EACH \$1299.99 Without CompuServe!

BLUEBERRY (APP M7493LL/A), TANGERINE (APP M7671LL/A), GRAPE (APP M7672LL/A), STRAWBERRY (APP M7673LL/A) OR LIME (APP M7674LL/A)

Apple® iBook" G3

Notebook Computer

•12.1" TFT screen •300MHz PowerPC" G3 processor •32MB SDRAM •3.2GB HD •24x CD-ROM •Up to 6 hr. battery life/charge

. 56K modem . 10/100Mbps Ethernet . USB port

5 159999 Original Price

40000 * CompuServe Rebate

110099 EACH - FINAL COST

EACH \$1599.99 Without CompuServe!

APP M27 S191/J. NIMCERNIC or JAPP M27071/J. BIUESERY
PoweRF and the PoweRF (top are indemnsks of international Business Machines Corporation, used under licenses thereform. Apple, the Apple loop, registered toolerance and lifect and illock are indemnsks of Apple Computer, Inc. Tip drive is a Indemnsk of Konego Corporation. ©1999 Apple Corporate in the property of their inspective owners. All Apple products are designed to be accessible to individuals with disabilities. For more into in the U.S. or in the property of their inspective owners. All Apple products are designed to be accessible to individuals with disabilities. For more into in the U.S. or in the property of their inspection owners. All Apple products are designed to be accessible to individuals with disabilities. For more into in the U.S. or in the property of their inspection of the U.S. or in the property of their inspection of the U.S. or in the property of their inspection of the U.S. or in the property of their inspection of the U.S. or in the property of their inspection of their in

J&R CORPORATE SALES BUSINESS LEASING:



No Money Down, No Payments for 30 Days! *Call J&R Corporate Sales for details at 1-800-221-3191 or 1-212-238-9080

To Order Free and Receive a Free Catalogue Toll

24 Hours, 7 Days, Anywhere In The USA

PARK ROW . NEW YORK . NY . 10038

FAX: 1-800-232-4432

tory-fresh & 100% g



Hewlett-Packard LaserJet 4MV •12MB RAM •Up to 11" x 17" paper •16-ppm
PostScript level 2 •600 dpi •Apple *71BM auto sense
•80 scaleable fonts •Built-in etherlink & LocalTalk*
•Factory refurbished with one-year HP warranty

EPSON Stylus* Color 740i Ink Jet Printer (EPS C257111)...after \$50 MFR Rebate \$ 179.99 EPSON Stylus Photo 1200 Color Inkjet Printer (EPS (264011) Hewlett-Packard DeskJet 812C Color Printer (HP CAATTR) \$149.99

Ratoc Systems



Ratoc Systems CB32PB Ultra Wide SCSI CardBus PC Card •For Macintosh PowerBook G3

\$ 24 999 (RAT (B32PB)

Ratoc Systems CBFW2 FireWire CardBus PC

Rutoc Systems USB SmartMedia Card Reade \$69.99 for Mar & PC (PAT SMANSII)

lomega



lomega External Ultra Thin Zip® 250MB USB/PCMCIA Drive

\$ **179**99 (BER ZIP250USB)

lomega" 250MB Zip" Parallel Port Drive OR lomega" 250MB Zip" 5C51 Drive (BER ZIP250FAR) OR (BER ZIP250SCS)\$149.99

after \$20.00 Mail-In Rebute! mega" 100MB USB Zip" Drive

\$129.99 (BER 7IP100USB) omega® 2GB Jaz® Drive

\$349.99 (RER INTEXTOGRACI

CD Writers



External Easy Racer CD Recorder with CD-RW ReWritability

•4x Write/4x Rewrite •CD-R disc & software included •299° (SMD SAF767)

Sony Spressa" CRX100E/X External USB

CD-RW Drive Kit (SON CRX100E/X) \$299.99 QPS External DVD-RAM Drive for Apple® G3 Computers (QPS DVDRAMEMG3) QPS Que! Drive 4x2x8 External

\$299.99

CD-ReWritable Drive for the iMac (OPS OP4281IIMAC)

Order from www.jandr.com **AOL** keyword: J&R

All Major Credit Cards Accepted

Overnight Delivery Available!

Order Code: MW001 (prices good until 01/15/00)



PRODUCT INDEX

Category Page No. **Business Operations 152-153** Bar Code Inventory Management Communications/ Cross Platform Education/

Entertainment156-159 Discount Software Web Hosting Memory & Upgrades ...168-170

Systems & Peripherals ..160-167 USB153-155

Digital Advertising Coordinator:

production@macworld.com

Category

Cables

CD Rom

Digital Media Magnetic Media **Printing Supplies**

Services

Peripheral Products159-160

Page No.

Data Recovery Digital Production Printing Repair

Account Manager:

Carol Johnstone.....415.243.3691 carol_johnstone@macworld.com

Account Manager:

Niki Stranz.....415.243.3664 niki stranz@macworld.com

Accietant.

Alissa Mach....415.243.3628 alissa mach@macworld.com



MicroStore Inc

P.O. Box 125 • Le Sueur, MN 56058 800-962-8885 Fax: 507-665-2604

www.microstore-mousepads.com

FREE DEBT RELIEF

Lower your monthly payments by up to 50%!

Not a loan. Not bankruptcy. A Debt Management system designed to get you out of debt - FREE! Direct referral to Non-Profit credit counseling.



FREE - CONFIDENTIAL - FAST Gather your bills and call today!

Call Us Toll Free 800-345-4220

Broadest Selection of Bar Code Products in the Industry Portable & non-portable Batch Readers
 Cordless interactive R/F Terminals

- Technically superior products direct from the manufacturer
- Toll free technical and

- pre-sale support
 24-hour turnaround on repairs
 Free UPS Blue shipping in U.S.
 30-day money back guarantee
 - Slot Badge

 PostScript bar code fonts

or visit our website at www.BARCODEHQ.COM

· Wand, Laser, CCD, Magstripe or

ORTHINGTON

Create your own bar code graphics.



CALL FOR FREE DEMO

Bar Code Pro v3.5 with Veribar

For guaranteed readability!

www.snx.com Tel 718 499-6293 Fax 718 768-3997

Call 800 619-0299

required! Mac/Win95/NT

-Imaging Magazine Create perfect PostScript

(EPS) bar code graphics for Quark, PageMaker,

Illustrator, Freehand, etc.

(UPC, Postnet, 39, EAN,

128, ITF, ISBN) included. Works with any printer resolution, with no fonts

All popular bar code types

SOLUTIONS

UPC/EAN/ISBN Code 39

And more

Bear Rock Offers: Free Expert Consultation Lifetime Technical Support



FREE Handbook Bar Code Basics



Call Today for a FREE Consultation!

Intl: (530) 672-0244 Fax: (530) 672-1103

153 on card or www.macworld.com/getinfo



ISB Connect

CADMOVER®v.5.1

What good is a built in translator if it doesn't work?

You've worked hard and now it's time to use those files in another program. You try to import them & all you get is garbage. Not with CADMOVER - For over ten years we've been helping people beat their deadlines, no redrawing, no touch-ups.

File formats: DWG, DXF, EPSF, PICT, CGM, IGES, HPGL, STL, MiniCAD, DDES2, etc... Internal Features: scaling, 2D/3D views, font mapping and more. With 16 decimal place accuracy redrawing is a thing of the past.

800-579-2244 • http://www.kandusoftware.com/macworld

156 on card or www.macworld.com/getinfo

POINT OF SALE · INVENTORY CONTROL

Software & Hardware for:



Now iMac compatible · Retail/Wholesale

- · Mail Order
- · Internet Commerce
- · Rentals
- · Service/Repair Manufacturing
- · FileMaker Tools

Fully Integrated Accounting Multi-Site Polling · Cross Platform Barcode Readers · Receipt Printers Cash Drawers · Mag Stripe Ribbons/Paper/Labels Credit Card Authorization

www.posdirect.com

(800) 622-7670 · sales@posdirect.com (618) 985-8237 vox · (618) 985-3014 fax



& Deposit Software



154 on card or www.macworld.com/getinfo

i View my iMac on a Television







You teach to make a difference. i • TView will make a difference in the way you teach.

5- 18m

i · View FOCUS Enhancements has just introduced the ONLY PC-to-TV video scan converter available for the popular iMac computer! The i Tview and i • TView Gold from FOCUS turn any televi-

sion into a large screen computer display. Instead of two or three students hovering around a computer monitor, the entire class can "get the big picture" on a large TV screen.

Call now for a free product guide

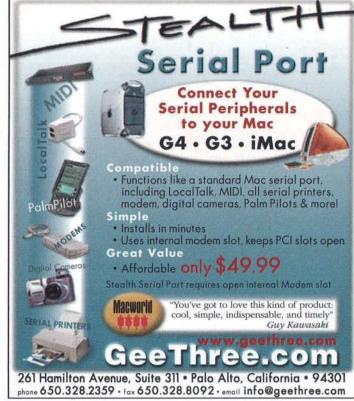
www.focusinfo.com

Enhance the teaching and learning experience by cap. tivating your classroom with eye-catching graphics and annotations. The i • TView Gold has the features and functions of the iTView, but with a remote for pan,

zoom, and freeze. It incorporates TrueScale® image technology to compress the image evenly and clearly without any line dropping.

888-356-3920

162 on card or www.macworld.com/getinfo



160 on card or www.macworld.com/getinfo





The gPort universal serial adapter is the perfect companion for your new blue G3 computer. Designed from the ground up with the G3 in mind it supports every serial device that works on your older Macs.

THE SERIAL SOLUTION

 Easy to install Economical Cost Effective

With the new G3s Apple has made a bold move to faster and more universal i/o interfaces. The aPort provides a great transition for people with existing serial equipment. Retail price \$49

USB Connect



macally" **USB** Peripherals for Mac











Macally is proud to bring you the lastest USB peripherals for Mac user. iHub7, iHubJr, iSweet, SweetNet, iMouseJr, iMouse, iMousePro, iBall, iBallPro, iKey, iHub, iStick, iShock, Cardbus to USB adapter and PCI to USB card are specifically designed for your Mac. Improve your productivity with Macally USB peripherals.

Call us for dealers near you 1-800-644-1132 or visit us at: www.macally.com

All trademark or registered trademarks are the property of their respective owners

You 5



Introducing Macsense's new line of USB Game Controllers and USB Peripherals

New Fully Programmable Game Controllers



iFunPad F-105



FunPad F-103



FunPad Pro F-107



iFunStick F-106



FunStickF-104

All controllers support GameSprockets and Non-GameSprockets games



FunStick Pro F-108

New USB Peripherals



KeyPad UK-300





iCatch



iHub UH-420





ichiMouse UM-100

Mini Hub UH-Mini4

No Software Required for Installation

Macsense products available through these following online stores



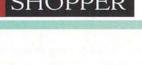


Maduaremouse MacConnection[®]



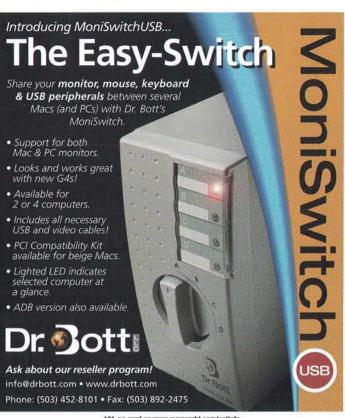
Please call or e-mail for a FREE product catalog Macsense Connectivity Inc. Tel:1-800-642-8860 Fax:408-844-0328 http://www.macsensetech.com

157 on card or www.macworld.com/getinfo





VSB Connect



Raise Your iMac To New Heights. Check out other iMac Accessories at: www.contourdesign.com & Add More Space to Your Desktop... iMac is a registered tradmark of Apple Computer, Inc. All trademarks and registered trademarks are the property of their respective owners.

161 on card or www.macworld.com/getinfo

163 on card or www.macworld.com/getinfo





Compatible with more Apple printers! Prints up to 4 times faster!

USB Twin Serial Adapter

Add 2 Mac serial ports to your USB Mac (\$79)

- · For use with tablets, modems, cameras and many printers
- Get two ports for the price of the single port solutions!

Digital Media Remote

USB remote control for PowerPoint, DVD, CD, & MP3 software players (\$79)

USB PDA Adapter

Connect Palm organizers to your USB Mac or Win98 PC (\$39)

Keyspan USB Card

Add 2 USB ports to your PCI PowerMac (\$39)

USB 4-Port Hub

Connect more USB devices to your USB Mac (\$59)

SX Pro Serial Card

Add 4 serial ports to your PCI PowerMac (\$179)



www.keyspan.com (510) 222-0131

Communications/Networking Cross Platform Education/Entertainment Music Software

ISP Web Hosting



Think Windows.

Think Maes.

Think network.

Think nightmare.

Think again.

PC MACLAN* A.K.A. & PC MIGRATOR

Connect. Rename. Migrate.

The complete solution for all of your Mac OS-to-Windows connectivity needs.

* Now includes MacOpener, the leading solution to open, read and write Mac media on a PC.

1-877-462-2272

www.miramarsys.com/products/olorder.htm

Miramar Systems

164 on card or www.macworld.com/getinfo





WHAT DOYOU WANT YOUR SITE TO DO!

Database Solutions:

HostPro supports a wide range of databases to meet your business needs, from the low cost mySQL to the popular Access and enterprise-class MS SQL...

Access . MS SQL . mySQL . mSQL . FoxPro . ASP

· ColdFusion 4.0 · Interdev · Drumbeat 2000

- 👪 Multimedia Solutions 🚺 Platform Solutions 🚺 E-Commerce Solutions

STANDARD FEATURES FOR ALL PACKAGES

- · Your own domain name (www.yourdomain.com)
- . Free domain name registration
- . Both Unix and NT hosting
- . 30 day money-back guarantee
- . Full support for Microsoft® FrontPage 98® and 2000®
- · Default e-mailing capability
- . Web control panel for site administration
- · Unlimited autoresponders
- . Unlimited FTP (24 hours per day)
- · Full custom CGI execution capability

- . Java™, Javascript, Servlets, Perl, C, C++, SSI & Python
- . Access to our vast CGI script library
- · Excite® search engine
- · Controllable anonymous FTP
- · Daily detailed hit analysis
- · Access to raw log files · Daily complete tape backup
- · Full-time un-interruptable battery backup
- · Shockwave, Quicktime, Flash, Vivo, Emblaze & MP3
- · Assistance w/script installation

Standard features, plus: • 60 MB of web space • 2,000 MB of traffic/month • 12 e-mail accounts NET NT Standard features, plus: • 60 MB of web space, 2000 MB Active Server Pages • Microsoft® Visual InterDev and Visual

Active Server Pages • Microsoft® Visual InterDev and Visual Studio . Complete stat reports using WebTrends Standard features, plus: • 100 MB of web space, 3,000 MB traffic/month, 20 e-mail accounts • Advanced ShopPlus Cart (a \$500 valuel) • Shared secure socket layer (SSL) • PaymentNet and CyberCash* • RealAudio® and RealVideo® & G2 • Microsoft® NetShow • mSQL and mySQL databases, Cron, PHP 3.0 NET PRO Standard features, plus: • 100 MB of web space, 3000 MB traffic/month, 20 e-mail accounts • Advanced ShopPlus Cart (a S500 value! • Shared secure socket layer (SSL) • PaymentNet and CyberCash" • Cold Fusion 4.0 • ASP, ActiveX", and VB script • Microsoft® Access and FoxPro database support • Microsoft® Visual InterDev and Visual Studio • Microsoft® Active Server Pages • RealAudio®, RealVideo® & G2 • Microsoft® NetShow • Complete

1.888.638.5831

www.hostpro.net • sales@hostpro.net





Tech Support



Digging for ideas?



Bring your IDEAS to Life

yourname.com

Fully loaded web site for \$20

/month*

- 50 MB disk space
- 2 GB traffic / month
- 10 mailboxes
- Frontpage™ server extensions
- web based control panel, web site statistics, etc.

NEW! Speciality Packages:

Media Site: featuring RealAudio*, RealVideo*,

Flash™, Truespeech

Web Stores: One Stop Solutions for web store

hosting, shopping carts, secure servers, credit card processing.

30 day money back guarantee! 24x7 toll-free tech support

For more details visit our web page or call toll free.



NetNation www.netnation.com 1-888-277-0000 Communications Inc. Int.:+1(604) 688-8946

Set up fees not included. Prices and features subject to change without notice. All trademarks are the property of the respective owners.

ACADEMIC DISCOUNTS

Super Savings for Students, Teachers, and Schools 3D Suite v4.0 DreamWeaver 2 Lightwave 3D V6 \$98 Bryce 4 \$139 \$639 ElectricImage Minicad 8 Vectorworks \$329 \$369 Filemaker Pro 5 \$148 Microsoft Office 98 Canoma \$299 Fireworks 2 \$98 \$209 Carrera Painter 6 Coda Finale 2000 \$214 Flash 4 \$98 Iomega CodeWarrior Pro 5 \$109 Form•Z \$849 Wacom 6x8 Tablet \$284 Director 7 Freehand 8 \$98 \$329 (PC titles also available!) Visit ADWonline.com for online-Call for Free Catalog! 1-800-333-8571 Fax PO's and ID's to 512-450-0263

165 on card or www.macworld.com/getinfo

www.ADWonline.com

ALL SOFTWARE \$999 www.999software.com

206 on card or www.macworld.com/getinfo

Got a Mac?
On the Internet?

Make it do something.

We'll show you how. www.macalive.com

©Copyright 1999 Trexar Technologies, Inc.

167 on card or www.macworld.com/getinfo



166 on card or www.macworld.com/getinfo

SAVINGS FOR STUDENTS, TEACHERS, & SCHOOLS

ACADEMIC DISCOUNT SUPERSTORE

After Dark 4.0 Deluxe..... Authorware 4.0..... \$399 Auto F/X AutoEYE..... Auto F/X Photo/Graphic Edges \$89 Boris FX 4.0 for Premiere...... \$479 Bryce 4.0.... CADtools 2.0.... Cakewalk Metro 4.0..... Canoma 1.0..... Canvas 7.0..... \$199 Coda Finale 2000..... Conflict Catcher 8..... CoreIDRAW 8.0..... Cubase VST 4.1..... DeBabelizer 3.0..... DenebaCAD 2.0..... \$269 Director 7.0..... \$349 Dramatica Pro 4.0..... \$209 EdgeWizard 2.0..... ElectricImage 3D 2.9..... Electrifier Pro..... EndNote 3.0..... \$105 FireWorks 2.0.... \$59 Font Agent 2.7..... Font Reserve 2.0..... \$89 Form Z 3.0..... \$899 FreeHand 8.0..... Gemini Plualn.... Headline Studio 1.0..... \$79 HomePage 3.0.... \$59 InfiniD 4.5..... \$299 Intellihance 4.0 Pro..... \$99 MAPublisher 3.5..... \$125 MacDraft 4.3.... \$145 MacDrive 98..... \$39 MacLinkPlus 11 Deluxe...... MagicMask 2.0..... Mathematica 4.0..... MiniCAD 8.01 Vectorworks.... Mirage NY Scenery & Skylines\$99 Myrmidon 2.1.... Neal's Efex..... NetObjects Fusion 3.0..... \$99 NewTek Inspire 3D..... \$299 Nisus Writer 5.1.3.... Painter 6..... Pantone ColorSuite..... \$229 PhotoSpray..... PhotoTools 3.0..... Portfolio 4.0.... \$109 Poser 4.0..... \$179 PowerCad 4.0.... \$399 RayDream Studio 5.5..... \$229 SciFi Textures..... \$125 ScriptThing 3.0..... \$149 Scriptware 1.0.... \$139 Strata StudioPro 2.5..... \$449 Total Xaos..... \$119 Virtual PC 3.0.... \$159 Wacom Intuos 9x12 USB...... \$399 WebPainter 3.0.... \$55 WebSTAR 3.0..... \$479 WebSpice 2,000,000..... \$59 WordPerfect 3.5.1....

Professional Web Site Design and Production

Web Animation using Vector Graphics

Create High-End Vector Graphics for the Web

Buy ALL 3 and receive Dreamweaver 2 Visual Quickstart Book FREE!!

FileMaker Pro

5.0

Powerful relational database software



Wacom Intuos 6x8 USB

Intelligent graphics tablet system



CodeWarrior

Pro R5

Integrated

Development

Environment

Xenofex 1.0

16 Inspirational

Effects to energize

Kais Power Tools 6.0

> Photoshop Plug-ins

LightWave 3D 6.0

*Model





Mask Pro 2.0

Professional precision masking and selection tool

Norton Utilities 5.0

> World's Best Utility Package

Mirage Design Studio NY Scenery & Skylines

Royalty-Free DRUMSCANNED photographic images -35 mb

-CMYK JPEG's



Final Draft 5.0

Professional Screenwriting Software



Visit our website for...

K-12 software -Books -Videos

-Free software contests

-Secure ordering



Software ShowCase (800)

417 Euclid Ave. Loch Arbour, NJ 07711 Phone# 732-660-8820 Fax# 732-660-8828









* Not responsible for typographical errors * Prices subject to change

FLIGHTCHECK 3.6....



Discount Software Education/Entertainment Cables • Printing Supplies Peripheral Products



68 Pin Drive to 50 Bus 68 Pin Drive to 50 Pin IDC

(runs wide drive as narrow)

68 Pin External Adapter to 50 Pin
 (converts Host Adapter)

Styles: 68 Pin Adapter Wide to 50 Pin Narrow

: For Adaptec Ultra Wide Cards

Online Catalog at... www.scsipro.com

Orive Bus Changer run 68 pin on 50 pin bus

 Adapters with partial termination built in for 68 to 50

converters (converts Host Adapter)





Granite Cables Are The Best Because They're Engineered Right.

Granite Cables were designed by SCSI Engineers to be the s On The Market. Everything about them means better performance and higher reliability. Our design incorporates an exclusive shield that protects the Acknowledge and Request lines from noise. Large Ferrite beads are installed on all cables to protect them from static and noise Every cable incorporates a LED indicator that lets you know it is operating properly. We also use more GOLD on every cable. Add to this our impedance matching techniques and you have most of what makes us THE BEST!

Granite

FREE Technical Support!!! Available to everyone,

customer or not.

3101 Whipple Rd. Union City, CA. 94587 Ph: 510-471-6442 Fax 510-471-6267

Three models to choose from:

• 50 pin Centronics • 68 pin MicroD

• 50 pin IDC

The SCSI Solution Company 171 on card or www.macworld.com/getinfo

Peripheral Products Batteries **Systems & Peripherals**









3.6v Lithium \$6.50 4.5v Alkaline \$9.50

Call Toll Free

1-888-808-PRAM

 Free Shipping Available Quantity Discounts

MacBatteries



310 966-4433 11933 Wilshire Blvd.

W. Los Angeles, CA 90025 sales@macsolutions.com

(800)80-WF-BI

MediaGuide

Your #1 Macintosh Source!

Brand New

SHOP ONLINE!

Need a Mac?

Need stuff for your Mac? We've got it.

NEW · USED · PARTS · RAM · PERIPHERALS & TONS MORE

www.MediaGuide.com

OEM CDs:

Sony 24x MacOS 8.5.....\$49 Norton Util 4.0...\$19 CD-ROM ClarisWorks 5....\$29 Int.....\$79 MacOS 8.1.....\$29 Ext...\$109

HOT Bundle specials! (CPU plus 13/14 monitor, kb/m) Ilci 8/425...\$159 • Ilsi 9/230...\$149 • Ilvx 8/425..\$169 Q650 16/425/CD...\$279 · Q630 20/250/CD..\$249 6100 24/350/CD \$349 • 7100 40/425/CD \$429

Duo 280c 40/1gig/14.4..\$399

Not online? No problem! Call (888) 466-227



your complete used Mac resource

Mac of All Trades takes the fear out of buying and selling used equipment.

Refurbished and tested

Mac-savvy advisors

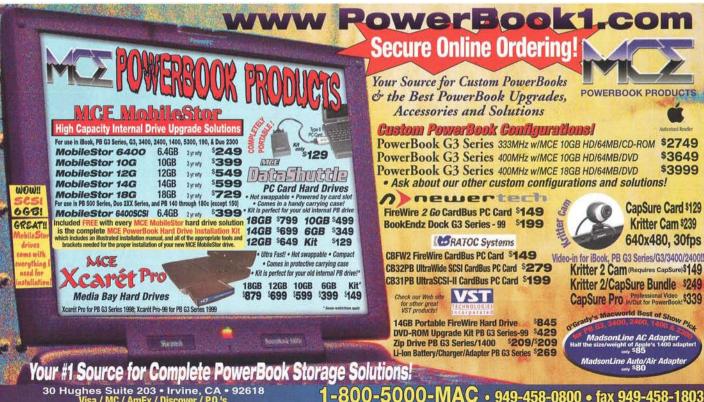
Best Prices

800.304.4639

Direct: 404.355.5144 Cust. Service: 404.355.5668 Fax: 404.355.5461 500 Bishop Street, Suite E.3 Atlanta, Georgia 30318

macofalltrades.com



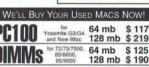












Mac RAM 233/286/ 64 mb \$ 108 333 MHz 128 mb \$ 220 www.computeraddict.com

800-432-2983

Fax: 310/448-4494

he Lowest Finance Rate

Ultimate Scan-Station-G4/450MHZ 1024MB/25GB PowerLook 3000

Software Specials QuarkXpress4\$649 15K ClipArt/2002 Fonts/3D World CD \$29 ea. Apple Mac OS 7.6/8/8.1/8.5 \$59/55/59/69 Act V2.8/Apple AIX NetworkServer \$129/\$289 AntiVirus5/SAM V4/Apple UtilitiesCD \$49/29 Bryce3D/4/Expression \$99/125*/149 Claris EMailer/DRAW/Calendar Maker \$69 ea. Claris Works V4/5/AppleWorks \$49/59/89 Claris Impact/Organizer/HomePage \$69 each Caere OmniPagePro V5/8/Direct\$89/189/29 Corel DRAW 6/8/9 \$189/289/329 Director V5/6/6.5/Studio \$199/289/389/489 DeBabelizer V3/06/3/studio \$1932/3/3/3/480 DeBabelizer V3/ Dantz Retrospect4.1\$199/99 Extensis MaskPro2/PortFolio \$199/109 Extensis Preflight Pro/ PhotoGraphics \$269/99 Extensis PhotoTools/QXTool4 \$129/129 FileMaker Pro. V2.1/4/Server \$49/109/489 Final Cut Pro/FlightCheck \$949/\$355 Flash 4/ Freehand 8/DreamWeaver2 \$249 ea. Fontographer V4/Freehand V5 Studio \$199 ea FrameMakerV5/V5.5/FWB CD Tool\$289/449/39 FWB Hard Disk Tool Kits PE/V/3 \$39/95 Games CD / Utilities CD \$9 each, GoLlve4/infini-D v4/4.5 \$259/369/439 LivePicture SE/2.5/3/6 \$79/129/149/279 Kai's PowerTool LE/V3/V5 \$29/69/95 Microsoft Office4 2 1/97Pro. \$149/199 Microsoft Offic98Upg./98/2000\$149/199/\$389 MediaCleanerPro4/QuarkXpress4\$289/649 Norton Utilities/Anti-Virus Bundle \$79 both Norton Utilities V3.5/4 NetObject \$39/49/89 Painter3/5/5.5/PageMaker/6 569/149/29/199 Pantone Color Drive/Color WEB \$69 each Persuasion V3/V4 PowerPoint98 \$99/189/189 PhotoFrame Vol 1/2 \$89 ea. \$159 both PhotoFlash / PhotoDeluxe \$39/25 Poser V2/V3/V4 \$79/139/229 Poset v2/v3/v4 \$7/9/159/229

SuitCase3/8 Stuffit Delux5 \$25/\$59/59

SoundEdit16+DEC II/SwimSuit CD\$199/249/29

StrataStudioProV2/V2.5 /V-Shop \$489/635/49

VirusScan 3/ Virex V5.8/5.9 \$29/\$49/58

JAZ/ZIP, Hard DR. & CDR Devices SCSI External w/FWB 400MB/1GB/2GB/3GB \$79/129/179/199 +\$294GB/6GB/9GB/18GB \$229/269/299/649 Quantum Atlas II 4GB/9GB \$249/439 Quantum Viking LVD 9GB/18GB \$429/679 +\$39 +\$49 +\$59 Quantum Atlas III 9GB/18GB \$499/699 Seagate 4GB Hawk/Barracuda Seagate 9GB Elite/Barracuda \$229/269 +630 Seagate 18GB Barracuda/Cheeta\$699/889 +\$59 Jaz ext. Dr. 1GB/2GB \$209/\$299 +\$29 Zip Dr. 100MB/250MBExt. \$99/\$169+\$29 \$299 +\$19 \$289 +\$29 Apple DVD-ROM Dr. w/MPEG Decorder \$299 +\$29 ORB 2GB /DVD-RAM 5.2GB SCSI \$195/\$699 +\$39

COMBO Drives: 9GB + CD-R Ext. SCSI JAZ + CD-R Ext. SCSI \$599 \$449 JAZ+ZIP+9GB+CD-R \$989 18GB AV + JAZ + CD-R \$999 \$289 JAZ+ZIP

Tape Ext. Drive SDT2000/4000/5000 \$199/299/499 SDT7000/9000/10000 \$599/799/1089 DLT 30GB/40GB/60GB \$1189/1489/1989 USB Drive - 3GB/4GB/6GB \$99/149/199

12GB/17GB/20GB/25GB \$299/369/399/459

Super RAID- Quantum/Seagate SCSI III Fast & Wide, LVD

8GB/18GB RAID - \$ 589/ \$989 36GB/54GB RAID - \$ 1789 / \$25 72GB / 108GB RAID - \$3489/\$5999

16GB RAID - \$6589/\$9989 288GB RAID - \$ 13899

Close-Out Specials MAC IICX/ II/PF405 as fow as \$169 PM 6116CD 16MB/1GB/CD\$389 PM 7200 16MB/1GB/CD PM 6500 32MB/3GB/CD \$849 PM 9500 32MB/1GB/CD 8GB F&W DiskArray \$689 SyQuest 270/200MB Ext. Drive\$249/199 Fujitsu 230MB MO / WANG DAT \$199 ea SONY 650MB/1.3GB M.O. Dr. \$589/989 AUTOCAD Rev. LE/13/14 \$249/589/989 Apple Japanese/Chinese Language Kil\$139 Apple Arabian/Cyrillic Language Kil\$69 ea. Apple Internet Connection/Produc.Tool \$39 Apple Video Shop/Web Workshop \$69 ea. Apple Share V4/IP5/IP6 \$199/249/439 Canvas V3/V5/V6 \$139/249/339 Carryas V3/V5/V6 \$159/249/339 Conflict Catcher V3/4/8 \$39/59/67 M.S. WIN95/98/Project 98 \$69/99/289 M.S. Words V5/V6/98 \$89/189/269 Nova SoftBackl In/Seanate Backl In \$69 ea OmniPageDirect/V5.5/V9 \$29/149/279 WordPerfect3.5/Windows98 \$75/95

Display & AV Card, XKeyBoard ATI Xclaim VR VideoEdit/ ATI RAGE 128 16MB \$99/159 Apple AV - In&Out -Exchange/VideoWizard \$289 ea. Targa 1000PCI / 2000 NuBus -Demo \$989*/\$489* Targa 2000PCI / 2000PCI Pro - Demo \$1889*/2489* Targa 2000 PCI RTX / SDX -Demo \$4489*/\$5889* MiroDC30+/MotoDV/Targa Break out box*\$779/489*

XKeyBoard w/Touch PAD / 56K Int. modem \$49/99 Apple Extended KeyBoard\$139/\$89 (Japanese) Kensington 2-Button Mouse / Turbo Mouse \$29/95 IMAC SCSI &TV / 68-68 SCSI III Cable \$155/35

Basic Systems

Buy! Lease! G3/300 128/12GB/24XCD Beige \$47 w/ 17" monitor XKeyty G4/400 128/20GB/ZIP/DVD \$2999 \$74 w/ 20" monitor XKeyboard Mous G4/ 450 384/20GB/ZIP/24XCD w/ Mitsubishi 21", XKeyboard, Mouse \$3999 \$11 PowerTowerPro -G3 366MHZ 96MB/9GB/CD \$119 w/ 19" monitor , XKeyboard, Mouse \$2399 \$59 PM8100-Targa 2000/96/4GB/CD Video Edit. w/15" monitor, XKeyboard, Mouse \$1599 Pentium III -500MHZ/96MB/12GB/CD w/17' monitor, XKeyboard, Mouse \$1999 PowerBook G3 - 250MHZ 96MB/3GB/CD \$49 w/ 56K Modern/Photoshop/Illustrator \$49

ER MONTH

PLUG&PLAY

30/72 Pin 168 pin 8MB \$29 \$29 16MB \$49 \$49 \$49 32MB \$89 \$89 \$89 - \$149 - \$289 - \$589 64MB 128MB \$249 256MB \$489 512MB - Processor Upgrade \$989

Memory

604E 180/233 \$99/189 UMAX 2nd -250MHZ \$249 \$289/389 \$589/689 G3 300/333 G3 366/400

lomega 1.0GB/2GB JAZ \$69*/\$89 100MB/250MB Zip \$9/17

SyQuest 44MB/88MB \$25/35 200MB/270MB \$49/59

EZ135/230MB \$29/39 SyJet 1.5GB \$99 M.O. Cart.

128MB/230MB \$8/12 640MB/650MB \$29/34 1GB Tahiti \$89 1.2GB/1.3GB \$49/59 2.6GB/4.6GB \$149/189

Fax: 310-782-5974 E-Mail:Imagesol4U@AOL.com

http://www.imagesolutions4U.com 385 Van Ness Ave. #110 • Torrance, CA 90501



Order from 7 to 6 weekdays, Saturday from 10 to 12. Visit our showroom 9 to 6 weekdays, weekends by appointment.

Prices subject to change without notice. Not errors. 24 hour replacement limited to provi-



The solution provider for print shops, service bureaus and imaging professionals



TOLL FREE 877-638-2822

SCHOOL AND GOV'T ALL MAJOR CREDIT CARDS ACCEPTED

Where the price is right and the service is priceless 35 Samsonite Bivd. Suite C • Murfreesboro, TN 37129 PH: 615-904-1070 FAX: 615-890-1070



www.preowned.com

183 on card or www.macworld.com/getinfo

GUARANTEED LOW PRICES SPECIALS - PRODUCT INFO - UPDATES AT., Systems & Peripherals w.macmart.com POWERBOOKS POWERMACS iBook 300 12.1" 32 - 3.1 CD-56K G3/333 14.1" 64-4GB-CD-56K G3/400 14.1" 64-6GB-DVD-56K G3/350 64 MEG - 6 GB - CD G3/400 64-MEG - 6 GB - DVD G3/400 128 MEG - 12 GB-CD-ZIP \$1199 2349 \$3295 \$1489 \$1820 VST PowerBook G3 Zip Drive \$189 G3/450 128 MEG -9 GB SCSI - CD \$2245 VIDEO / DISPLAYS Apple Studio Display 17"/15" \$469 / \$1229 Hitachi .22dp 17" 7 19" \$439 / \$489 Princeton 17" EO710 / 19" EO900 \$299 / \$499 G4/350 64 MEG -10GB-CD-56K G4/400 64 MEG -10GB-CD-56K \$1499 \$439 / \$489 \$299 / \$499 \$329 / \$429 \$559 / \$659 \$1649 G4/400 128-20GB-DVD-ZIP-56 \$2345 Princeton 17" EO710 / 19" EO900 Sony 17" 21065 / G200 Sony 19" 420GS / 400PS Sony 21" 520GS / 500PS Viewsonic 17" .27dp Q71 Viewsonic 17" .25dp PS775 USB \$3249 G4/450 256-27GB-DVD/RAM-ZIP SYSTEM BUNDLE SPECIALS Contact Us for Other Specials & Substitutions \$935 / \$1089 G3/350 64-6GB-CD-56K Modem \$1635 SCSI Card & 17" .25 Display \$255 Viewsonic 19" E790 / G810 21" \$418 / \$795 G4/350 64 -10GB-CD-56K Iomega Zip & 17" .25dp Display \$1895 PRINTERS / SCANNERS Agfa T1200 / EPhoto 780C G4/400 128-10GB-CD-56K \$2089 Epson Stylus 740 / 750 Epson 636U / 1200U \$195 / \$239 \$179 / \$225 Iomega Zip, SCSI Card, 17" .25 Display Epson 636U / 1200U
Epson 800 Exec.w/PS / 836XL
Epson Stylus 1620 / 3000
HP Laser 2100M / 4050TN
Microtek X6EL / IV / 5
Nikon CoolPix 700 / 950
Tattranic Color Laser 740 / Ph G4/450 256-27GB-DVD-56K-ZIP XL \$599 | \$2175 \$459 | \$1149 \$749 | \$1549 \$169 | \$539 | \$1465 \$4099 17" Studio Display, PhotoShop 5.5 LIFETIME MEMORY WARRANTY G3 & G4 64MB / 128 MB G3 PB & iMac 64 MB / 128 MB 72 Pin Simms 16MB / 32MB \$79 / \$135 \$85 / \$145 \$35 / \$59 \$529 / \$869 Tektronix Color Laser 740 / Plus \$1899 / \$2695 Umax 2000U / Powerlook III \$119 / \$799 \$119 / \$799 Xerox Laser 12 PPM USB P1202 Order Toll Free in the USA Newer FireWire 2GO PC Card \$179
Sony 6x4x2 CDRW USB \$227
VST FIREWIRE HD 10G 22G \$442 / \$619
\$299 1-800-600-2708 15828 Arminta St • Suite 2 • Van Nuys, Ca, 91406 EMAIL US AT: sales@macmart.com

MS Office 98 (Full Version)
Software-Storage-Cameras-Accy...
CALL Fax 818-904-1410
Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Pand Names are Indicated with their artifacts of the Indicated with the Indicated

1.800.472.4921

Fax: (310) 445-6611 Tel: (310) 445-6600 FAX TOLL FREE/JAPAN: 00-31-114211 Los Angeles CA 90064

INNOVATIVE COMPUTER & NETWORKING, INC.

GENUINE APPLE CD-RON 12xCD scsi

MONITORS

APPLE Studio 21"	
APPLE Studio 17"	\$475
APPLE 1710 Vision	17"\$199*
APPLE Multiple Sco	n 15" \$95*



G3 & G4 Upgrades

Available By: Newer Technology Sonnet, Mactell & Power Logix

Apple CD-ROMS & Hard Drive:

APPLE SCSI CD-ROM Drive 4xCD	\$2
APPLE SCSI CD-ROM Drive 12xCD	\$5
APPLE SCSI CD-ROM Drive 24xCD	\$8
APPLE 1GB 3.5" SCSI Hard Drive	
APPLE 2GB 3.5" SCSI Hard Drive	\$9
APPLE 4GB 3.5" SCSI Hard Drive	16

POWER MACS

	-REGUSTATION ID
G4 450 (2	56MB/27GB/DVD/Zip)
G4 400 (1:	28MB/20GB/DVD/Zip/Mod)\$2389
G4 350 (64	4MB/10GB/32XCD/56K/KB)\$1579
G3 333IM/	AC (32MB/6GB/24XCD/MOD/KB)\$969
G3 450M	128MB/UW9GB/24XCD/KB)\$2179
G3 400M (128MB/12GB/24XCD/KB/ZIP)\$1939
	64MB/6GB/DVD/KB)\$1589
	(64MB/6GB/24XCD/KB)
	32/6GB/CD/KB/SCSI\$1229*
	z 32/4GB/CD/KB/SCSI
	9600 300Mhz 64/4GB/CD/VC/KB \$1890*
	9500 233 MP 32/2GB/CD/VC/KB\$899*
100	9600 200Mhz 64/4GB/CD/VC/KB \$1395*
3	9500 132Mhz 32/1GB/CD/VC/KB .\$769*
11 8	8600 300 Mhz 32/4GB/CD/KB\$1195*
	8600 200 Mby 32/2GR/CD/KR 5005*

8600 300 Mhz 32/4GB/CD/KB\$1195*
8600 200 Mhz 32/2GB/CD/KB\$995*
8500 233Mhz 32/2GB/CD/KB\$769*
8500 120Mhz 32/1GB/CD/KB\$649*
7600 120 Mhz 16/1GB/CD/KB .\$569*
7500 100 Mhz 16/1GB/CD/KB .\$539*
7300 180 Mhz 16/2GB/CD/KB .5689*
7200 120 Mhz 16/1GB/CD/KB\$589*

7200 90Mhz 8/500MB/CD/KB\$329*

POWERBOOKS & DUOS G3 400Mhz 64/6GB/DVD/14.1"A/ETH/56K\$3385 G3 333Mhz 64/4GB/24xCD/14.1"A/ETH/56K ..\$2385 G3 300Mhz 64/8GB/CD/14.1"A/ETH/56K\$2295" G3 250Mhz 64/4GB/CD/13.1"A/ETH/56K \$1590° G3 233Mhz 32/2GB/CD/14.1"A/ETH/56K \$1485* 3400c 240Mhz 16/3GB/12XCD/Modem/ETH ..\$1290* 3400c 200Mhz 16/2GB/6XCD/Modem/ETH ...\$1179* 1400c 133Mhz 16/1GB/8xCD .S1085* 1400cs 117Mhz 12/750HD\$790* 170 25Mhz 4/40\$189* 5300ce 117Mhz 32/1GB\$629* 5300c 100Mhz 16/750MB\$559 DUO 2300c 100Mhz 8MB/750/ModemS479 DUO 280c 33Mhz 4MB/120/Modem\$195* DUO 270c 33Mhz 4MB/120/Modem\$185*

ICN has the largest inventory of USB & FierWire Peripherals. Please call for prices by Ariston & VST

DUO Dock\$59

POWERMACS (NUBUS) RECONDITIONED

8100 110Mhz 16/1GB/CD\$539 8100 100Mhz 16/700MB/CD . .\$429 8100 80Mhz 16/500MB/CD ...\$349 7100 80Mhz 8/250MB/CD\$229



Prices Subject to Change Without Notice • All Prices reflect 3% Cash Discount • * Refurbished ICN Is Not An Authorized Apple Dealer • All Trademarks Are Property Of Their Respective Companies. \$



0 8/230 w/ Mouse

G3 Upgradable

7100 8/500 w/ Mouse

G3 Upgradable

PowerMac 6400/20 16/2.4GB/CD G3 Upgrade PPC 6290 w/14" MS



G3 Upgradable 5 PCI SLOTS

PowerCurve 120 8/0/0 (U) Power PC 601 120Mhz

G3 Upgradeble PowerMac 6100-60 Package (U) Apple 15" AV Multiscan

PPC 7600-120 16/1.2GB/CD (U) Power PC 604 120Mhz G3 Upgradeble

Upgrade Cards (ONNO Available

JIMPLY:	4431
PM 6100/60 8/500/CD Mouse (U)	229.99
PM 7100/66 8/1.2G/CD Mouse (U)	349.99
Performa 6290 16/1.2G/CD 14" MS (U)	_449.99
PM 6400/200 16/2.4G/CD Mouse (U)	599.00
PM 8500/120 16/1.2G/CD Mouse (U)	699.99
PowerCurve 120 8/500/CD Mouse (U)	299.99
Performa 550 Built-in Monitor Mouse (I	1) 299.99

PowerBooks

PwrBook5300c 16/750 (U) PPC 100Mhz 1.44 FDHD Color I CD

10° Active Color LCD
PB 1xx Series Notebooks from 199.99
PB Duo 230 wBattery & AC (U) 199.99
PB 520 4/240 w/Battery & AC (U) 359.99
PB 520 4/240 w/Battery & AC (U) 409.99
PB 5300 16/750 w/Battery & AC (U) 699.00
NoteBook BackPacks (N) 29.99

Batteries & AC Power Adapters In Stock

Call for pricing



Motorola 28.8 Modem (N) Mac Ready Includes Cables

Includes Cables

PCMCIA 28.8/33.6bps Globai Village (N) 39.99
MacAlly Enet card 10BT LC/PDS (N) 49.99
MacAlly Enet card 10BT PCI (N) 49.99
MacAlly Enet card 1010BT PCI (N) 79.00
SPORT Ethernet HUB 10BT (N) 79.99
16Port Ethernet HUB 10BT (N) 79.99
16Port Ethernet HUB 10100BT (N) 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99
.... 289.99

Laser Toner & Inkjet Cartridges Top Quality Remanufactured Toner, Ink & Supplies COMPLETE Reference ON-LINE

Apple®, Canon®, Epson® and Hewlett-Packard®

APPLE ORIGINAL CD ROMS

Largest Inventory, Best Prices

8X 1200i....\$59.99 External

3600i..\$99.9

These drives are MacOS Bootable and use Apple Original Driver Software

Macintosh Ready! BOOTABLE

SI Hard Drives

240 Megabyte....\$69 500 Megabyte.....\$89 1 Gigabyte.....\$99 2 Gigabyte......\$129

Gigabyte.....\$199 9 Gigabyte......\$349

External Drives w/cables add \$50

DRIVE INSTALLATION KITS

In Stock Call for pricing

Kevboard Mice

Tangerine USB Mouse (N) Apple Mouse Great add on for Your new iBook!



Built in stereo speakers

Techworks 3Dfx VooDoo (N)

Game Card PCI VooDoo Accelerator

APPLE ATI MACH 64 (N) Video Card PCI 4MB 64 BIT

Workgroup Printer

13D MAC ROCKET

128bit 2D/3D controller, 4MB SGRAM and TV output A blast of pure 128-bit graphics power!

EPSON Stylus Color 740 1440 x 720 dpi Photo Quality color & laser of black text Up to 6 ppm black & 5 ppm color USB & Serial Mail-In rebate

All products are sold with a 90 Day PowerON warranty

WE BUY MACS!!! FAX TO 916-652-1881

"All Sales Final. No Cash Refunds Given "All Prices include 3% cash discount "Prices subject to change without notice Gov't & School PO's Accepted

Computer Services

Mon-Fri 7-6, Sat 10-5 4323 Anthony Ct. #1 Rocklin, CA. 95677

E-Mail: Sales@poweron.com All brand or product names are registered trad





MONITORS AppleVision 1710 Display AppleVision 1710 Display

w/PowerMac without PM purchase... \$249 purchase! Radius PrecisionView.. \$399 PCI Video Card...... ... \$49

POWERMAC 7300

7300/180

16/2G/CD POWERMACS

7500/100 16/1G/CD 7600/132 16/1G/CD 9500/132 32/2G/CD

\$549 RAM SPECIALS 32MB 168 pin DIMM.. \$45 64MB 168 pin DIMM.. \$85 32MB for PB 3400.

POWERBOOK 3400c/180 16/1.3G/CD Add 32MB RAM Leather Carrying Ca

is and trademarks are the property of their respective ov

TO ORDER CALL 1-800-281-3661

DataTech

Tel: 615-860-4422 Fax: 615-860-0390 Web: www.datatech-rmkt.com 471 Myatt Dr., Madison, TN 37115

Specializing in Rebuild Imagesetters (714) 892-5290 Fax: (714) 892-4361

ALL MAKES & MODELS Complete Prepress Systems

e-mail: prepress77@Hotmail.com Huntington Beach, California USA



INCLUDES: G3-MAC. Scanner, RIP, Imagesetter, Proof Printer, Processor & Software \$16,250

EMAKING SYSTEM



SAPHIR SCANNERS



OWTEK DRUM SCANNER



D4000: 4000 dpi. 3.9 Dyn Range, 6 bit, CYMK, RGB, Factory Refurb, Desktop Size

HARLEQUIN RIP

Software, PS Level 3 MAC OS, WIN 95, WIN NT Compatible for most Imagesetters \$4,695

SCITEX DOLEV

SCITEX DOLEV Drum Imagesetter: 200 – 2Up \$9,500



M-NEW & REFURB



MARLIN: 18" w/Punch & Harlequin RIP, NEW \$56K MAKO 4625: Best Priced New 18" Imagesetter w/ Harlequin SW RIP \$33,300

SILKSCREENING



IMAGESETTER: Agfa or Linotype 18" wide Hi-Quality Film - Pos Separations \$15,000

EST OF THE REST

Macintosh G3, PC Pentiums, All Prepress Software, File Servers, Networking Hubs & Switches, Color Proofing Printers & Match Print Equipment



1-800-533-900

Fax Bids: (310) 475-7744 or email at sales@compu-america.com 10435 Santa Monica Blvd., Los Angeles, CA 90025

Check out our Web! MPU-AMERICA

Government, University and Fortune 1000 P.O.'s are welcome! **Business Leasing is Available!** International Orders Please call tel: (310) 446-1771

We are open Mon-Sat, 9am-6pm

POWERMACS!

G4/500MT . . 256/27G/DVD/ZIP 3299 G4/450MT . . 128/20G/DVD/ZIP/56K . . 2299 G4/400MT . . 128/20G/DVD/ZIP/56K . . 1479 G3/450MT .. 128/9GW/24XCD2229 G3/400MT . . 128/12GIG/24XCD/ZIP . . . 1799 I-MAC G3/400 128/13G/DVD/56K/VID EDIT 1459 G3/400MT . . 64/6GIG/DVD 1449 G3/350MT . . 64/6GIG/24XCD 1199 G3/400MT ... 128/9GW/24XCD/SCSI ... 1699* G3/350MT . . 128/12G/24XCD/ZIP CALL G3/333MT ...128/9GW/24X2099* G3/300MT ... 64/4GIG/24XCDCALL G3/266MT ... G3/266MT32/6GIG/24X/ZIP1399* 32/4GIG/24XCD1299 G3/233MT 32/4GIG/24X/MODEM1299* 32/4GIG/24XCD1499* G3/300DT

WORKGROUP SERVERS 256/2-9G/24X/5HARI 128/9G/24X/5HARE 63/333 128/2-9G/24X/SHARE 128/4G/24X/SHARE G3/266

899 I-MAC G3/400 64/10G/DVD/56K/CID EDIT .1259 -MAC G3/350 64/6G/24XCD/56K . . . I-MAC G3/333 32/6G/24XCD/56K 869 POWERBOOKS

3400C/240. . 16/3G/CD/MOD 1199 3400C/200 16/2G/CD/MOD 1000 3400C/180 16/1G/CD/MOD 2400C/180 16/2G/CD 1199 16/2G/CD 1400CS/166 16/2G/CD 999 14000/133 16/1G/CD 5300CE/117 . . 16/1GIG/14.4MODEM 5300CS/100 8/500

I-BOOK G3/300 32/3.2G/CD/12.1TFT/56K G3/233......32/2G/20X/12.15TN/56K ...1099 G3/750... ...32/4G/20X/13.3TFT/56K ... CALL G3/233......32/2G/20X/14.1TFT/56K ... CALL 64/4G/20X/14.1TFT/56K ... G3/266 CALL G3/300.... 64/8G/20X/14 1TFT/56K CALL G3/300 64/8G/DVD/14.1TFT/56K ... CALL G3/333(NEW)64/4G/24X/14.1TFT/56X .2299 G3/400(NEW) 64/6G/DVD/14.1TFT/56K3249

SONY Starting at 5**199** Sony E100/E200 Sony G200/G400/G500 399/699/1099 Sony 200PS/400PS/500PS

SonyF-400/F-500

Sony L-133/L-150/L-181

ViewSonic[®]

041.14 Q51/Q55 15° 159/169 071/095 229/389 E771/E773/E790229/279/399 G\$771/G773 289/309 GF775/GS790 339/439 PT771/PT775 469/429 P\$790/PF790 499/529 PF775/PT795 P810/PT813 829/899 859/1379 VIEWPANEL VPA145/VPD150 . . . VIEWPANEL VP151/VPA150 949/1029 CALL

VIEWPANEL VP181 RASTEROPS Superscan MC-801HR(1600X1200).22DP699 VISTA Astra 6105-P Superscan MC-7515 Superscan MC-8135

EPSON

..129 STYLUS COLOR 900/900G/900N 159/399/579 STYLUS COLOR 740/750/760 199/229/229 INTUOS 6 X 8 . STYLUS COLOR Photo-1200 STYLUS PRO-XL (11X17)LARGE FORMAT STYLUS COLOR 1520 ... 449 STYLUS COLOR 3000 .849"/1099 LASER EPL-5700I HEWLETT

PACKARD 899/949 4000N/4000TN 1069/1169 2100M/2100TNCALL 4050N/4050TN UMAX

VISTA Astra 1200/1220 149/159 VISTA Astra 2000U USB129 VISTA Astra 24005299 .969 POWERLOOK II

intuos

INTUOS 4 X 5 (USB) 12 INTHOS 9 X 12 .199 INTUOS 12 X 12. CALL nomega

ZIP DRIVE 100 MB EXT (SCSI) ZIP DRIVE 100 MB INT(G-3) ZIP DRIVE 100 MB EXT (USB) .119 JAZZ DRIVE 2 GIG EXT/INT299/299 ZIP 100MB CART (10 PACK) IATZ CART 1 GIG 71 JAZZ CART 2 GIG

🏶 GLOBAL VILLAGE Global Village Plat 56K EXT Global Village PLAT 56K INTERNAL(G-3) Global Village PLAT 56K EXT (USB)129 Global Village 56.6 PCMCIA

Sony MAVICA FD73/FD83/FD91 ...499/699/899 Superscan MC-8115 #1

64/4GIG/24XCD

64/4GIG/24XCD

4400/200 32/2GIG/CD/DOS CARD 699

9600/350

9600/300











599







699/1699

CALL

CALL

CALL

Your one-stop source for everything Macintosh®- over 30,000 items on sale at better than mail order prices! "PowerMax- where we offer a consultative relationship, not just a transaction."

Que! Drive. Product Spotlight \$299 Is your LaserWriter showing its age?





Starting at only



\$399

\$288

Serving Northwest Mac users for over 20 years

Call the Hard Drive Experts!

7					-
2 Gb Apple/IE	BM SCSI drive		\$109	_	\$15
4 Gb Gb IBM-	BM SCSI drive mfgr. with Apple ROMs! .	ша	\$159	.E	\$19
Fantom 6x24	CD-R Drive	te		æ	\$29
Ref Sony 4x8	CDR Recorder w/Toast	드		Œ	\$19
	CDR Recorder w/Toast				\$14
Orb 2.2 Gb Ex	xternal Removable Drive				\$19
Newer Techno	ology external USB ice blu	e fle	орру		\$8
Orb 2.2 Gb Ex	xternal Removable Drive				\$

Call the System Experts!



- · Professionally bench-tested Macs at
- low, low pricing.

 New models available every day.

 Our used and refurbished Macs often offer better expansion, price/perform-ance, upgradability and built-ins.
- Upgrade to a 4 gb. drive on any used Mac for only \$139!*

Those are past a few of the pre owner	and returned on mood for have be of
press time. See our web site for com	plete descriptions and the latest list.
	7300/180 16/4 Gb/CD
7100/66 8/500/CDS229	9500/150 64/2 Gb/CDS849
7100/66 8/1 Gb/CD\$249	
7200/75 32/500/CDS288	G3/266 DT 32/4 Gb/CDS1339
7200/90 40/500/CD\$319	Blue&Wh G3/300 64/6/CD\$1388
Radius 81/110 24/800/CD\$349	Blue&Wh G3/400 128/9/CD\$1649
6400/180 32/1.9/CD\$499	9600/200 32/4 Gb/CD\$1499
PowerBook 5300C 16/750\$529	Beige G3/300 64/8/24x/AV\$1699
PowerBook 5300CE 32/1 Gb\$588	Pwbk G3/233 32/2 Gb/14.1 .51888
7600/132 16/4 Gb/CD\$649	333 MHz iMac Blowout,
5900/233 32/4 Gb/CD-6 pci\$749	Ref Pbk G3-300 64/8/CD\$2249
iMac G3/233 32/4/24x CD\$649	Ref Pbk G3-300 64/8/DVD \$2449



We'll take your Mac OS computer in trade toward the purchase of new product. Call one of our with expert Mac consultants for full details!

- The latest prices and close-out product lists
- Order on-line or call one of our expert consultants
- Downloadable software on line! One click for hundreds of the latest award-winning titles!



 Personal Financing
 Fast P.O. Approvals Business Leasing • Extended Warranties







Call the Display Experts!

Daynaport PCI 10BT Card...\$29

Call our experts about great deals on: H.P., GCC, Xante, Xerox, Tektronix, NEC and more!

PCMCIA 56k & Ethernet\$89 | \$Factory refurbished to new specifications

Wacom 6x8 ArtZ II ADB Tablet[§]

DISPLAY BLOWOUT!!!

Our warehouse is jampacked with purchases we've made on the finest displays available today. Don't even think about buying a new monitor without calling PowerMax!



Power



.25mm dp with max resolution of 1280x1024— the best Trinitron® value ever! PowerMax 17" 720T Trinitron® 25mm dp with max resolution of 1600x1280— the highest quality Trinitron® made! \$369 Apple ColorSync 750 17" Display.... \$699 PowerMax 20" Sony Trinitron. gendary Sony Trinitron® quality with our best ever on any Trinitron® 20® display! Nokia 445xPro 21" Display. \$1399 Save over \$500 simply because Nokia changed models to inc Refurbished Apple 21" "Blue & White" Studio Display use Nokia changed models to include USB! Save big bucks on Apple's most stylish display ever!

NEC CS500 15" Display with Harmon & Kardon speakers

You have to see — and hear — this display to really appreciate it!

PowerMax 17" 701T Trinitron®

Local: (503) 624-1827 • Fax (503) 624-1635 email: sales@powermax.com

Prices subject to change without notice. Prices reflect cash discount. Credit card orders strictly verified against fraudulent use. With use of credit card as payment customer acknowledges that some products are subject to final sale. Many prices are limited to stock on hand. All brand or product names are registered trademarks of their respective holders.

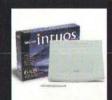
Some restrictions apply, iBook is not included in promotion. Call for complete details

ASK A USER GROUP



nowledge











Only Macintosh User Group members enjoy access to a very special Applesponsored web site featuring super discounts on great new products, factory refurbished and discontinued Macs, and much more! Not a member? Find out how you can get these great deals by calling PowerMax at 800-689-8191.







The MUG Store. A cooperative venture between Apple and PowerMax to bring MUG members exclusive deals on the latest Mac® products and special offers on discontinued and factory refurbished computers.

www.applemugstore.com

PowerMax is a division of Computer Stores NW, Corvallis, OR

For all this and more check out our website!

http://www.shrevesystems.com



- ARM 610 RISC processor at 20 MHz
- Back-Lit LCD display
- FREE W/ PURCHASE
- Newton Fax Modem

& Leather Newton Carry Case

PowerMac Upgrades

Quadra/Centris 610 to

PowerMac 6100/60

(refurbished)

As low as \$199! with exchange of your working board

Ouadra/Centris 650 to

PowerMac 7100/80 Upgrade

(refurbished)

As low as \$199!

with exchange of your working board

Quadra 800/840av to

PowerMac 8100/80

(refurbished)

As low as \$349!

PowerMac 7200 to

PowerMac 7600/120

(refurbished)

As low as \$399!

with exchange of your working board

Performa 6200/75

120-MHz Upgrade

(refurbished)

with exchange of your working board

s low as \$299!

with exchange of your working board

Lid not included \$4

PowerMac 6500/275

- · 32MB of RAM
- 4GB Hard Drive PowerPC
- 12X CD-ROM
- 275-MHz PowerPC 603e
- · Refurbished

IN STOCK!

- •32 MB RAM

6500/225

- \$579

- •2 GB hard drive
- •12x CD Rom drive
- **Factory Refurbished**

MACINTOSH LOGIC BOARDS

G3 logic board, No Processor, No ROM\$399.
7200/90 logic board, refurbished
LC logic board, refurbished
LC II logic board, relurbished\$129.
Mac LCIII logic board, returbished, exchange\$149.
Performa 630 ,No Processor, refurbished \$99.
8500 logic board, exchange
9500 logic board, exchange

Quadra 950 logic board, refurbished\$199 PowerMac CPU SALE!

4400/200

32/2GB/CD

\$629

9500/120

16/1GB/4X

\$999

refurbished

8500/120 0/0/0

\$**599**

6500/250 32/4GB/CD

^{\$}629

7250/120 32/2GB/8XCD

\$729

NEWI

6500/300 64/4GB/CD/Zip/56k

\$949

•APPLE TALK toner included

Carrying Case!

SEE OUR WWW SITE FOR OUR INTERNET SPECIAL!

ONLY!

PRINTERS

PowerBook 5300c

· Supports ext. video

24MB RAM

• 750 Hard Drive

· 100-MHz 603e

· Refurbished

600 dpi

• 12 ppm

· Dual-scan color FR

TI MicroLaser Pro E

Apple StyleWriter 1200, refurbished\$149. Apple Stylewriter 1500, factory refurbished\$179. Apple Color StyleWriter 2400, refurbished\$179. LaserWriter IInt, refurbished w/Toner\$199. LaserWriter IIf w/5MB RAM, returbished LaserWriter IIo w/5MB RAM, refurbished Texas Instruments Micro Laser Pro E NEW . .

Apple 11x17 Color Inkjet Printer NEW, #M9500 ... \$249. \$799

\$549 \$649 \$549

Laser toner cartridges sold separately

NEC SilentWriter 1765, 17ppml NEW

REFURBISHED POWERBOOKS 540c

12MB/320MB/ Color Active-matrix\$499

PowerBook 5300cs

Apple DVD Kit for **G3** Wallstreet





Save A Mac Foundation PB 3400/G3 **Laptop Batteries**

MacAlly Extended Keyboard



1.44 SuperDrives



NEW NO EXCHANGE REQUIRED!



NEW 7200/75 LOGIC BOARD ONLY \$79

Logic Board Blowout!!

	Ilfx logic board, refurbished	\$49.
	Centris 650 logic board, refurbished	\$99.
	Quadra 800 logic board, 'refurbished no processor .	\$79.
2	Quadra 840AV logic board, *refurbished no processo	\$99.
	Quadra 900 logic board, 'refurbished no processor	\$99.
	Performa 630 logic board, refurbished no processor	.\$99.
	PowerBook 520 logic board, refurbished	.\$99.
	PowerBook 540 logic board, refurbished	\$99.





FREE XClaim TV! NEW OEM · 3D RAGE II, 2MB VRAM



ClarisWorks 4 Internet Edition NEW!

FREE Claris HomePage!

Macintosh LC580 Internet Ready! \$ 21

- 33-MHz MC68LC040 · 8MB of RAM
- 800MB Hard Drive

G3 Logic Board

No Processor

WE BUY MACS & MAC STUFF (318) 424-9791

WE STOCK MAC PARTS!

1•800•227•3971 FAX (318) 424,9771 • Technical Support (318) 424,7987 Customer Service (318) 424.9791 • Purchasing/Information (318) 424.9791

1200 Marshall Street • Shreveport, Louisiana 71101

28.8 Motorola Modem

\$449 with internal 4XCD

Quadra 950

- · 8MB of RAM
- · 68040 33-MHz
- 5 Nubus Slots 🚖

Color LaserWriter 12/600PS

- 600-dpi
- 12 ppm
- · Color Photograde
- · Local Talk, Ethernet
- · Mac. DOS, Unix or Windows
- Toner included

Refurbished . .

VIDEO CARDS ATI XClaimVR RAGE II 2MB with FREE TV Option .\$149. E-Machines DoubleColor SX Nubus Card NEW \$49. RasterOps 24MX NEW, 24-bit Nubus\$149. Supermac 8.24 PDQ Plus, 24-bit Nubus card\$449.

*PowerMac HPV Card (1MB) \$79. *PowerMac A/V Card (2MB) ... MONITORS

AppleVision 850 Display, refurbished Apple 14" A/V NEW \$249 Apple 14" Multiscan, returbished \$149 Apple 15" Multiscan, refurbished Apple 15" AV, factory refurbished \$249 Apple MultiScan 17", refurbished \$249 Apple 20" Multiscan, refurbished \$649

Radius IntelliColor/20e, factory refurbished \$999. Voxon 15" Multiscan NEW\$199. ...\$199.

Radius Color Pivot LE, refurbished .. APPLE PC COMPATIBILITY CARDS

Pentium 100-MHz, refurbished Pentium 166-MHz, 12 PCI card, refurbished \$299. 486 66-Mhz for 6100 series, NE FREE PC CD pack with PC Card Purchase!

NUBUS ADAPTERS Quadra 660AV NuBus Adapter

Quadra 610 Nubus Adapter Ilsi Nubus adapter with math co-processor \$69. IMAGING PRODUCTS \$219

Annie QuickTake 200 returnished Apple QuickTake 150 refurbished\$179. Apple QuickTake 100 refurbished\$129.

QuickTake Cameras





"Products are returbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice. Returns are subject to a 15% restocking fee. Not responsible for typographical errors. All trade-ins MUST BE in working condition. Relutrished systems may include like-new components and may also include cosmetic blemishes which do not fundionally impair performance of the hardware.



"Macworld consistently produces inquiries and RESULTS! NEW & REPEAT CUSTOMERS ALL SAY:

MACWORLD SHOPPER.

KEEP UP THE GOOD WORK!"

DAVID ASH OWNER MACSOLUTIONS

WWW.MACSOLUTIONS.COM

\$449 Laserwriter Pro 630 •Mac OS 8.5 \$49

•17" Panasonic Monitor \$149 ·IBM 4GB SCSI HD

\$149 Zip SCSI Internal s69

 Apple Laserwriter IIg \$199 \$16 Myth II Soulblighter

We have over 100 Software Titles for ⁴9.ººea 918-664-MACS(6227

All Prices reflect 3% Cash Discount

Mac POWER

Sales & Service, Inc. BUY . SELL . TRADE **UPGRADE • REPAIR**

New • Used • Refurbished

Powrbooks PowrMacs

Monitors Printers

Performas

Peripherals Ram

Quadras Parts MacII-LC

www.macpowerinc.com

San Jose, California, 95123

888-275-*POWER*

MacWorks 800-482-27

e-mail: sales@macworks.com

Apple/Motorola ZIF Upgrade Cards Performa 6400/180 PowerMac Bundles Sony 12x CD-ROM

- Brand New, 2-Year Warranty
- an XLR8 CarrierZIF Card ZIF or 604e card

G3/333, 1MB \$19999 G3/400, 1MB \$39999 w/XLR8 CarrierZIF \$34998 w/XLR8 CarrierZIF \$54998

ONLY \$47999

PowerMac G3/350 MT

3199

2499

2299

1499

449

399

199

379

49

29.

19.

595.

Monitors

7600/132 16/1 208/4x/17 \$79999 \$64999 6400/180 16/1,6GB/8x/17*

7100/80 16/500/2x/17* \$59999 7100/66 24/500/29/17 6100/66 8/160/13" RGB"

\$49999 \$24999

ONLY \$69⁹⁹

Panasonic 4x CD-ROM

RocketFire 6-Port FireWire Hub

ONLY \$29999

IXMicro 8MB Ultimate **Rez PCI Card**

ONLY \$1599⁹⁹

\$1299.



3199 G4/450 128/20G/Dvd/Z/56K/USB 2299 G3/450 128/9GU2/CD 2199 G4/400 64/10G/32x/56/USB 1599

Reconditioned Macs

Best Prices. Best Service



G3/400 64/6G/DVD/56K/14 1

G3/333 64/4G/24X/56K/14.1

ibook G3/300 32/3,2GB/Tang.

ibook G3/300 32/3.2GB/Blue. iBook Airport Hardw. access Pt.

iBook Lithium-Ion Recharg. batt. iBook Irez Kritter USB W. Claw

Book Airport Card wireless

G3/300 64/8G/DVD/56K/14.1 G3/300 64/8G/CD/56K/14.1

G3/292 64/8G/20X/56K/14.1

G3/266 64/4G/20X/56K/14.1

G3/250 32/5G/20XCD/56K/13

G3/233 32/2G/20X/56K/14.1 3400C/180/200/240 from

1400C/133 16/1.3GB/8X 5300C 16/1GIG 5300CS 16/750

2400C/180 16/1.3GIG 540C 32/500/19.2 MDM

Apple Duo Dock II PLUS

Apple Studio Display 21"/17" 1349/459 Apple ColorSync 20"/17" 699/349 Apple Studio Display 15" 1099

Inventory Sale!

Color "11x17" Printer Full Bleed

19.2 modem f. PB 500 series

HP 6MP B.W. Laser

Ratteries for PR G3's

Centris Nubus Adapters

180 14/120/14.4 Fax

iBook AC Power Adapter







1449/899

979/849

789

449

309

189

899

699

399

489

CALL

149

949

http://www.infinity-micro.com email us at: Sales@infinity-micro.com

PowerMacs

G4/500 27GB/DVD/Zip/USB

G3/400 128/12G/CD/ZIP G3/400 64/6GB/DVD

G3/400MT 128/9GB/CD

G3/300MT 64/8GIG/24X

G3/266DT 32/4GIG/24X*

G3/233 32/4GB/24X/15** 9600/350 64/4GB/24xCD*

8600/200 32/2GB/CD/ZIP* 7300/200 32/2GIG/24X*

7100/80 8/500/CD* 6500/300 32/4GB/12X/56K/ZIP* 4400/200 32/2GB/CD * 7200/120 32/1.2/8xCD*

For most current prices & specials please

visit our web site: www.infinity-micro.com

G3/300MT 64/6GB/CD

7100/80 8/500/CD*

Apple LaserWriter 8500

Apple LaserWriter 12/640* Apple LaserWriter 300*

Color 11x17 printer Full Blog

Trade in your older 🌑

for a new G3!

G3/333MT 128/9GIG/24X

G3/350MT 64/6GB/DVD G3/350MT 128/12G/CD/ZIP

iMac G3 333/266/233 from

G3/350 64/6GB/CD

Best Delivery.

3199

2199

1200

1899

2199

2095

CALL

1329

2199

995

249

699

499

399

1299

699 199

379

Printers









Monitors OptiQuest Q51/Q53 15" OptiQuest Q71/Q73 17" 159/179 Optiquest V55 15" OptiQuest V73/V75 17" CALL CALL CALL OptiQuest V95 19" CALL

Optiquest V115/V115T 21" ViewSonic P817/P815 21" ViewSonic PT813/P810 21" /iewSonic PT795/PT775 ViewSonic G810 211 ViewSonic G790 19" ViewSonic GF775 17"

ViewSonic GS771 17" ViewSonic G655 15" ViewSonic MB110 21" ViewSonic MB90 19" Viewsonic M50 15"/M70 17"

199/309 Viewsonic E655 15"/E40 14" 169/139 LCD/Projection Units SONY Monitors

GDM-110GS 15" GDM-220GS 17" GDM-420GS 19"/520GS 21" 569 GDM-400PS 19"/500PS 21" 659/1099 GDM-F400 19"/F500 21" GDM-W900 24" 939/1129 2179

RASTEROPS" radus SuperScan MC6415 17" SuperScan MC7515 19" SuperScan MC8115 21"

Radius S-1 15' Radius L-1 19" Radius XI-2 21" "Visit us at www.infinity-micro.com"

Digital Cameras SONY FD91/FD73 905/477 SONY FD88/FD71 847/631 AGFA EPHOTO 1680 576
AGFA EPHOTO CL30/CL50 CALL

MEWLETT PACKARD Printers LaserJet 6MP*/4MV 595/895 LaserJet 2100TN LaserJet 4000N/TN 899 1149/1249 LaserJet 4050N/TN 1199/1549 LaserJet 5000N 1899 LaserJet 8000N/DN 2199/2999 LaserJet 8100N/DN LaserJet 8500N 2799/3699

QMS Printers

6399

Magicolor 330 /330EX 1849/4695 Magicolor 2CX/2DX Magicolor 2EX 1829/2199 2949

CC TECHNOLOGIES "Full Line Avaiable Please Call"

399 EPSON Printers

Stylus Pro-XL 11x17 199 229/259 Stylus 700/750 Stylus 740/740i Stylus 850/850NE 229/269 329/449 Stylus 900/900N 379/629 Stylus Photo 1200 Stylus 1520 479 479 889 GLOBALVILLAGE

TelePort 56K Mac 99 PowerPort 56K PcMCIA Software "Full Line Avaiable Please Call" AGFA 🔷 Scanners DuoScan SOLO/ T1200 2249/559 Snapscan 1212U/1236S 116/159 SnapScan 1236 /600 SnapScan Touch USB CALL

EPSON* Scanners Expression 800 ART/EXE 679/589 Expression Pro/836XL Perfection 636/636U 899/2099 259/199

MIGROCER Scanners Scanmaker 35T PLUS 609/619 ScanMaker 4/FL / 4/G3 ScanMaker 5 DUAL PSLE 2169 Scanmaker 6400XL DUAL 898 Scanmaker 9600XL ScanMaker X6/X6EL 1299 136/209

UMAX Scanners Astra 610s/1200S/1220U 59/118/119 Astra 2000U/2100U 118/149 Astra 1220S/2400S Mirage II/IISE PHT./IISE 1699/1079/ PowerLook 3000/IIADV

Video Cards

5895/949

ATI Rage Orion/Nexus 128 139/229 ATI XClaim 3D Plus IX Micro Ultimate Rez 3D 199 IX Micro Road Rocket f. PB G3 229 IX 3D Dual Monitor/Pro Rez Vision 3D EvilEve 2000/3500 179/259 Pinnacle Miromotion DC30+ Targa 2000 w. Adobe Premier 779 1649 Targa 2000 Pro w. Component Targa 1000 Video card 1149 1499

assurance please ask about our 4 year-onsite guarantee with us. (*) reflects reconditioned products. Visa, MC and American Express Frotune 500, Universities , Government & corporate p.o.'s are welcomed.

Superscan MC8135 21

PowerLook IIISE/II

FAST! EASY! SECURE!



Open Monday-Friday: 9am-8pm & Saturday: 10am-5pm CST

E-Mail Us at: owc@macsales.com

DISCOVER (O D

FedEx.

Quality Products at Competitive Prices from a Friendly and Mac Knowledgable Company!

OWC has the *Fast G3* and NEW **G** Upgrades You're Yearning For!



G3 Upgrades for PowerMac 6100/7100/8100/ 8150/9150/ Radius; Performa 611X Series

ONNET Cresendo Nubus Series from \$289

G3/240-266mhz 512k - \$289 G3/240-266mhz 1mb - \$385 G3/293-300mhz 1mb - \$439 (@NN@T G3/400mhz 1024k - \$595



G3 Upgrades for PowerMac7300/7500/7600/ 8500/8600/9500/9600s;WGS 7350/8550/<u>8</u>650/ 9650:PowerCenter/PowerWave/PowerTower; UMax S900/J700

G3/250mhz 512k - \$235 G3/300mhz 512k - \$289 G3/300mhz 1024k - \$385 G3/400mhz 1024k - \$575



XLR8 Carrier w/G4 AltiVec Processor

com for our complete line of G3 and G4 Processors!

Interex Acro air Carrier Fer Daughter	edi US
LR8 ZIF Carrier w/o Processor LR8 Carrier w/Mercury G3 350mhz 1mb	\$169 \$359
LR8 Carrier w/Mercury G3 400mhz 1mb	
LR8 Carrier w/Mercury 500mhz 1mb	\$875

G3 Upgrades for PowerMac 4400/5500/ 6360/6400/6500/ 20th Anniversary Mac; PowerBase; Umax C500/600 StarMax 3000/ 4000/5000 Series; Most Motorola Clones

G3/250mhz 512k - \$245 G3/300mhz 1024k- \$385 G3/300mhz 512k - \$295 G3/400mhz 1024k- \$585



P WERLOG!X owerForce G3/250mhz with 512k Cache

www.macsales.com

ommerce

has Easy, Fast, Secure Internet Ordering Now.

G3 Upgrade for PowerMac7300/ 7500/7600/8500/8600/9500/9600s; WGS 7350/8550/8650/9650; PowerCenter/PowerWave/ PowerTower; UMax S900/J700

Only

Call for G3 & G4 to 500mhz+.

Quantum Viking 4.5gb

7200rpm 8ms 512k w/3yr

FWB 3.0 Hard Drive ToolKit included with drive for \$10 additional.

SCSI Hard Drives ext. Quantum 4.5gb Viking II 7200rpm 512k 7.5ms 5yr. \$279 \$225 9.1gb Viking II 7200rpm 512k 7.5ms 5yr. 18.2gb AtlasIII 7200rpm 1024k 7.8ms 5yr. \$325 \$379 \$519 \$579 Seagate 2.1gb Barracuda 7200rpm 8ms lyr. 9.1gb Barracuda 7200rpm 7.1ms 1024k 5yr. 18.2gb Barracuda 7200rpm 7.1ms 1024k 5yr. \$145 \$389 \$619 \$329 \$549 9.1gb UltraStar 18ES 7200rpm 7.1ms 2048k 5yr. \$299 18.2gb UltraStar 18ES 7200rpm 7.1ms 2048k 5yr. \$499 \$359 \$559

Visit www.macsales.com for a full selection of UltraWide and Ultra2 drives up to 50gb in a single device!

Seagate

IDE Hard Drives

SAVE BIG! 6.4gb Seagate Only: \$109

 IBM
 Seagate
 Quantum

 15.2 - \$149
 13.0gb - \$139
 4.3gb - \$99

 25.0 - \$269
 17.2gb - \$169
 13.0gb - \$139

 37.5 - \$439
 28.0gb - \$259
 18.0gb - \$199

Call or visit www.macsales.com for our full line!

IDE PowerBook Drives for PowerBook 150; 190/1400/5300/3400; G3 PowerBooks; Duo 2300 and 2400 Series. 4200rpm w/ 3 yr. warranty 2.1gb IBM Travelstor non-slim 4900 rpm....\$99 6.4gb Toshiba Slim.....\$229 10.1gb Toshiba \$329 10.1gb IBM Travelstor Slim..... 14.4gb IBM Travelstor Slim....

With 8mb of V-Ram

iMac*Voodoo II GameWizard 8mb \$ 165 Rev A/B iMac Only) 3dFx Voodoo III PCI 3D Accelerator w/16mbs.\$129 Cyborg 3D USB Joystick565 Interex XLR8 InterView
USB Video Capture Device\$99 Bungie Marathon Action Pack\$2 Sim City 3000\$499 StarCraft..... MacSoft Unreal Tournament......5

Other World Computing

224 West Judd St., Woodstock, IL 60098 Intl.: (815) 338-8685 Fax: (815) 338-4332

www.tastermacs.com

- More Stuff to Make your Mac a FasterMac!
- Upgrades for Older Macs too!

www.macsales.com

- More Mac products and information
- FREE DELIVERY* when you place your order online! Visit us for USB, Monitors, Printers, USED Deals & More....

Mac Memory G3 SDRAMs (Call for G4 Memory)
Apple Spec PC 100 Memory for ALL Beige G3
Desktops, Minitowers, All-In Ones, & New

Blue & White G3 Computers (work with PC's too) 32mb - \$69 64mb - \$139 128mb - \$279

256mb(66mhz for Beige) \$599 256mb(100mhz for Blue & White) \$599

iBook/Wallstreet/Lombard/iMac



\$69 64mb - \$139 128mb - \$279 256mb - \$549

5V Edo \$49 168 Pin MacDimms 16mb \$69 32mb \$69 \$129 \$129 64mb 128mb \$249 \$289

72 Pin Simms 16mb- \$35 32mb- \$65 64mb*- \$129

*for 61/71/8100 and compatibles only.

Call or visit www.macsales.com for other memory & video/vram upgrades.

OWC is a Techworks Authorized Reseller. Call or Visit our website at www.macsales.com for the best prices on Techworks Brand Memory.

Pauer 30 Perform

Fires, Specifications, and Availability subject to change without notice. Items returned complete in original returned within 30 days may be subject to up to a 15% restocking fee. No return will be accepted without Return Merchandise Authorization Number. WD1299 * See www.macsales.com for Free Delivery details

2.5" up to 22gbs.



The Best Memory Prices & Guarantee 800-662-7466

Secure online ordering: datamem.com Lifetime Memory Replacement Guarantee DMS will meet or beat anyone's price!





MEMORY UPGRADES FOR Computers • Printers Notebooks • Digital Cameras

EPSON



16-bit Color Card with Ethernet for PowerBook 5300 \$29.00

 Accelerators & CPU Upgrades Hard Drives & CD-ROM Drives

- Modems for Mac & PCs
- . Monitors-Std. color to Pro Mods.
- UMAX Color Scanners
- EPSON Stylus Color Printers Networking Connection Prods.

Pentium® Computer System Specials

USB Scanners/Printers & Accessories



DMS ACCEPTS GOVERNMENT, EDUCATIONAL & CORPO-RATE P.O.s WITH PRIOR APPROVAL

FAX P.O.s 24 HOURS TO DMS @ 603.898.6585 Open M-F 9a.m. 'til 9p.m.

187 on card or www.macworld.com/getinfo

WHY IS THE COMPETITION SHAKING?

BECAUSE IS HERE

CAN

ANY QUOTED PRICE ON ANY MEMORY FOR ANY COMPUTER (NOTEBOOK, DESKTOP,

PRINTERS) ANYWHERE ... PERIOD!

- **O LIFETIME WARRANTY**
- **FREE TECH SUPPORT**
- NO CREDIT CARD SURCHARGE
- **O MOST ORDERS SHIPPED SAME DAY**

CALL AROUND THEN CALLUS

CHECK OUR WEB SITE FOR SPECIALS WWW.18004MEMORY.COM

Pssst - over here.

Yeah, you holding the magazine. I wanted to let you know that UpgradeStuff has been around for a year now, selling G3 upgrades, memory, and peripherals to Mac users just like you. Maybe it's time you checked them out. But let's keep it between us, OK?





Serving the Mac Users memory needs since 1991. We sell only NEW, Grade A, Full Apple Spec RAM

800-307-343

Fax 775-823-2200 5301 Longley Lane, Reno, NV 89511 www.tahoeperipherals.com

186 on card or www.macworld.com/getinfo

COMPARE OUR LOW SHIPPING RATES E-Mail: sales@lib.com • PO's accepted upon approval No surcharge on credit cards • Returns subject to restocking fee

• Prices subject to change,
not responsible for errors • International orders welcome Mail PO's to:

2513 152nd Avenue N.E.

Redmond, WA 98052

1999

§1179

\$1537

\$1976

\$2882

\$2424

\$3399

\$2999

PB3400 G3

\$225_{128MB} POWERMAC G3

PC66-10NS 32MB 4x64.....\$73 64MB 8x64.....\$149

128MB 16x64......\$225 256MB 32x64......\$420

\$169 64MB

8x64x60EDO 3.3V 16MB 2x64.....\$49 32MB 4x64......\$78 64MB 8x64.....\$169

> 35 64MB 8x64x60EDO 5V

16MB 2x64.....\$40 32MB 4x64.....\$69 64MB 8x64.....\$135

NEW POWERMAC G3 8X64-8 (PC100-8NS)

64MB 8x64.....\$110 128MB16x64.....\$240 256MB 32x64.....\$528

> 6/ 32MB

168-PIN FPM DIMM 32MB 4x64.....\$67 64MB 8x64.....\$135

128MB 16x64.....\$325

32MB 72-PIN SIMM

8MB 2x32.....\$21 16MB 4x32.....\$31 32MB 8x32.....\$58

IOMEGA Zip Drive Zip Drive USB ZIP 100 disk 1119 1151 110 ZIP 100 disks -3-pk 128 ZIP 100 disks -10-pk Jaz 1GB disk 189 Jaz 1GB disks - 5-pk 1405 Jaz 1GB disks - 20-pk

NEWER TECHNOLOGY

For the PowerMac 6100 Series Maxpowr G3 240/266MHz/1MB Cache NEW For the PowerMac 7500/8500/ Etc. Maxpowr G3 400MHz/1MB Cache F726 Maxpowr G3 466MHz/1MB Cache NEW For the PowerMac G3 Series Maxpowr G3 366MHz/1MB Cache 615 Maxpowr G3 400MHz/1MB Cache 1679 Maxpowr G3 466MHz/1MB Cache 1817

Powerbook

WALL ST./ IMAC **IBOOK** 128MB 64MB 32MB 16MB \$275 \$131 \$63 \$40 128MB 64MB 32MB PB 3400 SERIES PB 5300 SERIES

48MB 32MB 16MB \$189 \$133 128MB \$235 **96MB** \$180 64MB \$164 \$60 32MB 8MB

PB 500 SERIES

32MB 16MB \$120 \$62 \$40

DESKTOP/MINITOWER

IMAC 233 32/4GB/24X CD/56k

iMAC 333 32/6GB/24X CD/56K

POWERBOOKS

G3/300 (MT) 64/6GB/24X CD

G3/350 (MT) 64/6GB/DVD

G3/400 (MT) 128/9GB/24X

G3/333 64/4GB/20X14.1 TFT

G3/300 64/8GB/20X/14.1 TFT

G3/400 64/8GB/20X14.1 TFT

128MB 64MB 32MB \$235 \$160 \$94 \$83 PB1400 SERIES PB 2400 SERIES **64MB**

48MB Kit \$189 24MB \$102 16MB \$69 8MB \$52 \$55

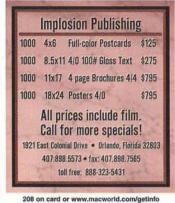
\$135 \$95 \$80 \$75

189 on card or www.macworld.com/getinfo

Memory & Upgrades

Services Printing . Digital Production





Digital Imaging

Slides & Negatives \$3.75 4x5 Transparencies/Negs \$30 Large Posters & Displays Scanning: Hi & Lo Res **Kodak Photo-CD Scans** Short Run Color Printing Show & Tell 39 W 38th St., NY, NY 10018

www.show-tell.net

212 840-2912 212-840-7953 (fax) showtel@ibm.net • shotel@aol.com

191 on card or www.macworld.com/getinfo





DELUXE COLOR PRINTING!



- Super thick card Ready in 5-7 days!
- . Glossy UV coating . NO Film Charge!

1-800-957-5787

www.postcardpress.com Preferred by over 5,000 professionals!

CD-ROM PRODUCT

1000 Retail-Ready Stamped CDs Includes two color discs, four color glossy insert & tray cards, jewel case, and poly wrap. Complete turnkey - just send a CD-R and art files! Call for details.



Your CD-ROM Production Source™ http://www.catalogic.com



New! 18Mb of data or audio on a husiness card shaped disc. It really plays! See our web site for details.

We Also Offer:

- · CD-R slik-screening service
- Short run CD-R duplication
- Standalone CD-R dupers

Call today: (800) 255-4020





ABSOLUTELY, POSITIVELY, Plus, Lifetime Warranty on all RAM!



Authorized Dealer Apple Specialist Authorized Service Provider



G4/TUSEINITE - FC TUU		200/200/000 IMAG RAM		GO SUNAIN - III STUCK!!		
32 mb	\$ 65	32 mb	\$ 68	32 mb		\$ 67
64 mb	108	64 mb	108	64 mb	Samo I	85
128 mb	219	128 mb	218	128 mb	IGE!	185
256 mb	419	256 mb	465	256 mb		410
PowerBook	G3 (98-99)	168 Pin	DIMMs	SIM	Ms 72 & 30	pin
32 mb	\$ 68	16 mb	\$ 34	4 mb	30 pin	\$ 7
64 mb	VET 108	32 mb	A 4 = 68	16 mb	30 pin /	19
128 mb	218	64 mb	135	16 mb	72 pin	33
256 mb	465	128 mb	188	32 mb	72 pin	57
*** At Press time	the Memory man	ket was extremely v	olatile. Please cal	I for the most	up-to-date p	rices.

CACHE • VRAM • PRINTER, DIGITAL CAMERA & PC-CLONE MEMORY AVAILABLE

Special Web Site Pricing available only at www.macsolutions.com

MacSolutions, Inc. Fax: (310) 966-4433 11933 Wilshire Blvd, West Los Angeles, CA 90025 University & School P.O.'s Welcome

All prices are subject to change. Merchandise subject to prior sale. Please call for up-to-the-minute info and availability. Not responsible for typographic errors. Limited to stock on hand. Ad Code #1015

cure Online Ordering or call 800-873-3RAM

w.macsolutions.com

Plus, Great Deals on Hard Drives, Software and more...

IBM 1080 SCSI \$ 79 Quantum 1.2gb scsi 105 Seagate 4.5gb MedSCSI 180 Seagate 9.1gb Med SCSI 299 Seagate Cheetah/Barracuda CALL PBook G3 10gb Drive 365

\$ 99 Fujitsu 4.3qb IDE Ontm 9.1ab IDE 7200 140 Ontm 18.2gb IDE 7200 225 Microsoft Office 4.2.1 CD only 75 MacOS 8.1 CD only 25 MacOS 8.6 Update w/free 8.5 CD 59

WE BUY, SELL & TRADE MACS! **CALL 800-80-WE-BUY**

Super Deals on Pre-Owned Macs!

G3 266 MT	32/6gb/24x/AV	\$ 1,400
9600/200 MP	64/4gb/CD/Zip	1,750
7300/200	32/2gb/8x	775
6400/200	16/2.4gb/8x	575
7600/120	€ 16/1gb/4x	500
7200/75	16/500/4x	400
7100/66	8/500	275
6100/60	8/230	250
PwrBook 1400cs/117	16/750/6x	990
PwrBook 1400cs/117	12/750/Floppy	800
PwrBook 5300c/100	8/500	650
PwrBook 5300cs/100	8/500	600



mpression

Professional QuickTime Streaming Services

ng and heating for QuickTime 4 we one 247 cereally streaming media for video-on-demand & live events. Our state of the art automated compression facility s clients such as Apple Computer, H80, Fox orts, Warner Bros., VH1, and Reprise Records with the highest possible quality RTSP and HTTP video & audio. Visit our QuickTime microsite for more info and online streaming samples:

- ▶ 24/7 QuickTime digitizing & encoding
- Beta SP, DV & other sources accepted
- Same-day service available via FTP
- MacOSX QuickTime Streaming Server hosting
- Encoding, hosting and systems consultancy
- DVD-R, DVD-ROM, DVD-Video production

Call 415 884 2155 today

Colorprints Virdigital color print

> visit our website at www.colorprints.com for the lowest prices on digital color prints

SYQUEST, IOMEGA, ORB AND OPTICAL. AVAILABLE, REASONABLE RATES. VIRTUALLY ALL OPERATING SYSTEMS. GUARANTEED RESULTS*.

online quotes http://www.totalrecall.com 2462 WAYNOKA ROAD COLO SPRINGS, CO 80915 • 719-380-1616 • FAX 719-380-7022

Dear John,
ether for



Sure, you're probably familiar with the workings of your computer and your favorite programs. You're probably a savvy surfer of the net. *BUT ...*

YOU KNOW HOW TO PROTECT YOUR WPUTER FROM:

- **Accidental Damage**
- Theft
- **Power Surges**
- Flood

- **Vandalism**
- **Other Natural Disasters Excluding Earthquakes**

SAFEWARE, THE INSURANCE AGENCY INC., offers a comprehensive insurance plan to protect your valuable computer. Computerowners™ covers your hardware, media and purchased software.

ays for the cost of repair or replacement. Mo deduction for depreciation. Low \$50.00 deductible. 30-day trial period.

RIGHT AWAY! Complete, sign and return to Safeware with your credit card or check payment. For higher insurance amounts, premium quotes, more information or enrollment by phone Call 1-800-800-1492. Name Address/City/State/ZIP_ Daytime Phone ______ 1. Have you had any losses in the past 3 years? ☐ Yes □ No 2. Do you currently travel with your computer at least once a week? ☐ Yes □ No 3. Are you a student? ☐ Yes □ No Choose Amount of Insurance 1 Yr. Premium' Up to \$2,000 \$ 49 Residents of \$ 2,001 - \$ 5,000 FL, add 2% \$ 69 FIGA fee; KY \$ 5,001 - \$ 8,000 \$ 89 add 1.5% \$ 8,001 - \$11,000 \$109 surcharge. ☐ \$11,001 - \$14,000 \$129 **CALL FOR RATES ON OTHER INSURANCE AMOUNTS** Amount Charged/ Enclosed (see rate chart) \$ _ Enclosed is my payment for one year. ☐ Check (payable to Safeware) ☐ MasterCard * ☐ VISA* ☐ Discover* ☐ American Express* Exp. Date If paying by credit card, I understand my policy will be automatically renewed annually and the premium billed to my credit card account. Subject to underwriting review. Signature X Payment of insurance premium by credit card is not permitted in North Carolina

Coverage not available in Alabama. Excludes original defects, mechanical breakdown, theft from an unattended vehicle earthquake, loss of income or data reconstruction. Read policy for full details of benefits and exclusions. Underwriting requirements may vary by state, Vold where prohibited. Residents of Texas, call for information. Coverage begins once payment is accepted by SAFEWARE, subject to underwriting.

payment is accepted by SAFEWARE, subject to underwriting.

Any person who knowingly and with intent to defraud any insurance company or other person files an application for insurance or statement of claim containing any materially false information or conceals, for the purposes of misleading, information concerning any fact material thereto, commits a fraudent insurance act, which is a crime, and may subject such person to criminal and substantial civil penalties. Any person who knowingly and with intent to injure, defraud or deceive any insurer files a statement of claim or an application containing any false, incomplete, of misleading information is guilty of a felony of the third degree. (Applicable in FL.) Any person who includes any false or misleading information on an application for an insurance policy is subject to criminal and civil penalties. (Applicable in NJ.) it is a crime to knowingly provide false, incomplete or misleading information to an insurance company for the purpose of defrauding the company. Penalties include imprisonment, fines and denial of insurance benefits. (Applicable in VA.)



Safeware, The Insurance Agency Inc. P.O. Box 26296, Columbus, OH 43226-0296 (614) 781-1492 • Toll-free: 1-800-800-1492

Visit our website at www.safeware.com . E-Mail: safeware@safeware.com

190 on card or www.macworld.com/getinfo



MAC REPAIR & UPGRADE

24 HOUR SERVICE TURNAROUND . LONGER WARRANTY FREE DIAGNOSTIC . COMPETITIVE PRICE

- * Specialize in component repairs: · Power Mac · Power Book · Logic boards * Advance Exchanges

3095 Osgood Court, Fremont, CA 94539 • Tel: 510-661-0999 • Fax: 510-661-6788 http://www.dttservice.com

By Nick Majors' DATA RECOVERY LABS "The Best Data Recovery Service available - Anywhere - at any Price!" Dedicated in-house MAC specialists are available to work on your emergency data recovery. Complete facility with clean rooms and full MAC capabilities. Free evaluations. All recoveries are 100% satisfaction guaranteed. Complicated / top priority projects are our specialty. 1-800-563-1167 latarec.com USA . Canada . Japan www.datarec.com

Data Recovery in hours.

- Over 10 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.
- We've recovered more than half-amillion megabytes of Mac Data alone.
- You only pay when there's a recovery.
- Express One-Day Service is available.
- Call 24 hours a day.

DT&T

MACINTOSH

SERVICES, INC.

115-495-5556 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY 881 Clementina Street • San Francisco, California 94103



800-341-DAT



G3 All In One

32/4GB/24xCD/Zip.....\$1299 6100 8/0.....\$99 8500 Logic Board from \$299 17" Studio Display(Refurb). \$349

> PowerComputing **Specialists**

G3 400MHZ/1MB Ziff Processor5249

w/XLR8 ZIF Carrier Only \$399

Apple 24x CD Rom \$99

New · Used · Refurbished

First Street San Jose, CA 95131 • 800 933-4962 • www.allmac.com

200 on card or www.macworld.com/getinfe

COMING SOON:

NEW Apple Developers' Showcase

GET THE WORD OUT!

Look for new text line ads in the February Issue!

To advertise, call Alissa Mach @ 800/597-1594 ext. 3



WHOLESALE WATERLESS

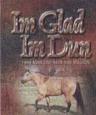
FROM YOUR COMPUTER FILES

1000 FULL COLOR BUSINESS CARDS FOR \$100 Sug. retail 1000 FULL COLOR POSTCARDS FOR \$149 Sug. retail

Printed waterless at 300 line screen from your computer files on Super Premium 10pt, Kromekote with our FREE scratch-resistant aqueous coating.



- BUSINESS CARDS
- POSTCARDS **CD INSERTS**
- CD TRAY LINERS
- BROCHURES
- BOOKLETS
- **NEWSLETTERS**
- POSTERS & MORE





FEATURING 300 LINE SCREEN WATERLESS OFFSET PRINTING

Rates for Brochures, Booklets and Flat Sheets are also available.

LTHD., ENV. & BC SPECIAL

1,000 each of our 4-Color Letterhead, Envelopes
and Business Cards printed from your computer files. Letterhead and Envelopes printed on Hammermill Via Ultra Smooth, BCs printed on 10 pt. Kromekote. Each additional 1,000 is only \$99 per item.

OUARK

COREL



GRAPHIC ARTS

AVAILABLE







PRINTERS, INC. 4413 82nd Street . Lubbock, TX 79424 . FAX: 806,798.8190

Email your requests for printing quotes to request@copycraft.com

800.794

CALL TODAY FOR A FREE COPY OF OUR NEW 32-PAGE FULL COLOR CATALOG

Visit www.copycraft.com for more Specials...in English or Spanish!

198 on card or www.macworld.com/getinfo

DATA RECOVERY: 800-440-1904

7 good reasons to choose DriveSavers:

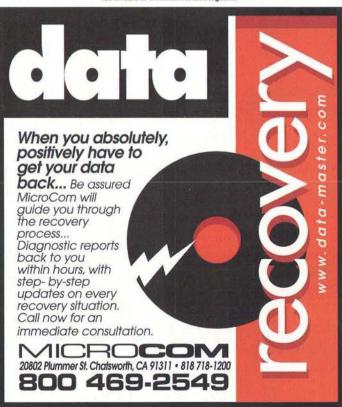


- 1. DriveSavers is the ONLY Apple Authorized Data Recovery Service.
- 2. Recommended and certified by all drive companies to open the drive and still maintain the warranty.
- 3. Retrieve recovered data instantly with DATAEXPRESS™ over secured Internet lines.
- 4. 24-hour, onsite, and weekend service available.
- 5. Advanced, proprietary recovery techniques.
- 6. Featured on CNN, BBC, Discovery Channel. Also in Forbes, MacWorld, Mac Addict, Popular Mechanics, and many others.
- 7. Federal and State Contracts (GSA, CMAS.)



Since 1985 INTL: 415-382-2000

www.drivesavers.com



"Macworld Lab has proven to be one of the most pristine and controlled lab environments to which we've provided our scanners and software for testing."

Jon Guerringue, Marketing Manager Heidelberg Color Publishing Solutions

the most rigorous





in the

industry

Planning. Researching. Testing. Analyzing.
Re-testing. Double-checking. Nobody adheres to stricter, more



rigorous guidelines than the lab specialists whose work

is dedicated to Mac product testing at Macworld Lab.

Macworld Lab is the largest independent testing facility for Mac OS products and systems. Our lab specialists apply more than 30 years' combined experience to ensure that testing methodologies represent a product's real-world use.

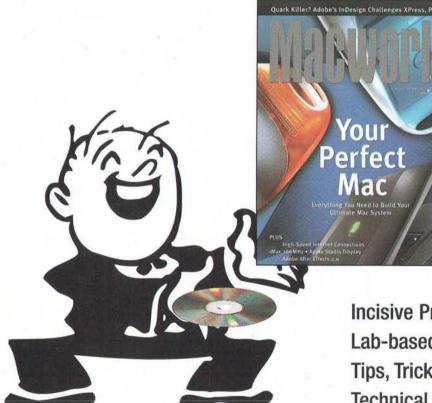
Macworld





THE #1 MACINTOSH RESOURCE

Get super savings on a subscription, plus a FREE CD-ROM.



Incisive Product Reviews
Lab-based Performance Tests
Tips, Tricks & Tutorials
Technical Solutions
Coverage of Emerging Technology
And much more!

Macworld is the best way to stay on top of today's fast-changing Macintosh technology. And here's your chance to save big on a subscription, plus get the exclusive Macworld Clip Art CD-ROM containing an extensive collection of images, digital stock photos, and more — FREE with your paid order.

To get it all, go to

http://subscribe.macworld.com

Thinking More about Different

IF APPLE CAN REINVENT COMPUTERS, THINK WHAT IT COULD DO FOR DIAPERS

HINK DIFFERENT," IF you ask me, is a great slogan. First of all, it's perfectly grammatical; Apple's telling you not how to think, but rather what to think about. Nobody complains about "Think big," "Think thin," or, as I saw on a skier's car recently, "Think snow." The oft proposed revision, "Think differently," makes no more sense than "Think bigly" or "Think snowly."

Furthermore, Apple actually lives by its motto. Frankly, I have my doubts that things actually go better with Coke, that quality really is job one at Ford, and that Pepperidge Farm does, in fact, remember. But Apple's designers truly do spend their days reconsidering computer design.

The iMac's cables, for example, connect on the side, where you can reach them, instead of on the back. The iBook wakes up when you open it—a brilliantly obvious behavior. And the ingenious drawbridgey side panel of the Power Macs should make other computer makers smack each others' foreheads.

Apple's inspired me. I've become obsessed with design, even the design of everyday things. Why are things the way they are—and why can't they be better? I can't help wondering what everyday products would be like if Steve Jobs and his chief designer, Jonathan Ive, could have a whack at them. If they ever quit their day jobs, here are some ideas to get them going.

The Clock Radio Why must we adjust the wake time by pressing a fast-forward button, praying that we release it at precisely the right instant? Every hotel guest in the world wastes three minutes nightly performing this ridiculous ritual. Would it be so difficult to add a number pad, like the number keys on a telephone, to the standard clock radio so that I could simply punch in 830 A and be done with

it? Touch-tone phones cost \$15 at Wal-Mart; number-pad parts are cheap.

The Diaper New parents quickly master a peculiar skill: gauging whether a baby's diaper needs to be changed. You wind up pinching the white, gel-filled panels of the diaper in a queasy attempt to measure its change-worthiness.

So here's my brilliant idea: Why don't the manufacturers make diapers that turn blue when they're wet? I've seen toothbrushes and razor cartridges that change color when it's time to replace them—why not diapers? The par-

their babies

Sketch for foot operated sketch for thange say, it expressions wouldn't crawl wouldn't crawl

around in wet diapers longer than necessary—and Lord knows, the diaper company would win, because parents would change such diapers more often.

The Keychain At high-tech companies these days, employees carry photo-ID cards that unlock doors automatically as they brush by. You can wear one on your belt, to keep your hands free. Phase One: Make this no-hassle system standard in homes, too, so you don't even have to put down the groceries.

Phase Two: Program these cards to store the passcodes for every door in our lives—front door, back door, car door. Physical keychains, and their accompanying inconvenience, disappear forever. (Ironically, Mac OS 9's Keychain control panel is exactly this idea. Now it just needs to leave the software world and enter the real one.)

Airline Web Sites At least four times in the last several years, I've driven all the way out to the airport, only to find that my flight has been canceled. The Jobs-Ive overhaul: Suppose that, when we bought a ticket, airlines let us indicate an e-mail address or a pager, fax, or phone number. Then, in the event of a delayed or canceled flight, we'd be notified automatically. Heck, we should even have the option of being notified when

the plane's leaving *on schedule*—as a friendly reminder.

This wouldn't require hiring more staff—I'm talking about a completely automated system. It would take some programmer about a weekend to set up. The airline could make fabulous marketing hay: "We're the first airline that cares about your time." (Believe it or not, I once laid this idea on a board member of a major airline. Needless to

say, it expired in his head faster than last year's frequent-flyer miles.)

The Kitchen Sink In hospitals, you step on a foot pedal to turn on the water. Why not at home? You could wash hands or dishes far more conveniently, prevent the spread of faucet-handle cold bugs, and save water because you'd avoid leaving the tap running. Anyone got Kohler's 800 number?

The Mouse Before they overhaul America's keychains and diapers, I've got a more pressing assignment for Jobs and Ive: Apple's modern mouse. You can't rest your hand on the stubby little thing, and it's hard to tell when you've got it straight. This is one case where Apple needs to think different—about thinking different. m

DAVID POGUE (www.davidpogue.com) thinks bookly about his new *The iBook for Dummies* (IDG Books Worldwide, 1999).



The G4 is the fastest personal computer ever. Which is great, unless you just bought a G3.

Have the fastest Mac AGAIN... with a Newer MAXpowr™ G4-ZIF upgrade card.

Your blue and white PowerMac G₃ is maybe a year old (maybe less), and here comes the G₄. Well, Newer feels your pain – and we have the remedy. You, too, can own a supercomputer without shelling out big bucks. Just plug in a MAXpowr G₄–ZIF upgrade card from Newer and run dozens of AltiVec™ Velocity Engine—enabled software applications. Newer Technology is a worldwide leader in the CPU upgrade and peripheral enhancement markets. The creator of the first Power Macintosh processor upgrade, Newer's patent-pending technology offers higher compatibility than any other company. Check our web site for a complete list of supported systems.



To learn how to get the most from your Mac, visit us at www.newertech.com.

Circle 55 on card or go to www.macworld.com/getinfo

Part Professor. Part Gingler.



MouseWorks° and TurboBall's" smart, customizable buttons help you be more productive, while their sculpted shapes are designed to keep your hand in a more natural position. Smarts that help you work better and good looks designed for comfort...who said brains and beauty don't belong together? For more info visit www.kensington.com/shape.

KENSINGTON Smart design at work.

blendte and Mouse Works are recisioned indomests and flutrobial is a leaderture of ACCO World Corporation of other resistence and onable-tries trade-marks 20 the property of their resistence works. 2099 Kansandro Technology Group & decision of ACCO State